Public Health in the State and Counties of Virginia

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF HEALTH
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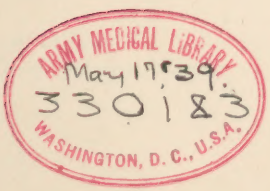
RICHMOND, VIRGINIA
1939



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FOREWORD

With the emphasis which is being placed on public health activities and the rapid expansion to which such services have been subjected during the past few years, it seemed especially fitting that a study be made at this time as the present represents possibly the end of one era in public health and the beginning of another, based on the broader concept that certain medical activities are the proper sphere of public health.

The Virginia Department of Health welcomed the opportunity of having a detailed study of its work made by the International Health Division of the Rockefeller Foundation. To that end an agreement was made with the Foundation by the Department in September 1937 for such a study.

The following report of the Department's present activities, with recommendations for the future development of both State and local health services, is the result of that study.

The document is historical, factual, and highly constructive. Emphasis is placed upon consolidation of health districts, increased coordination of activities, and measures adapted to meet the official public health needs of the future.

The State Department of Health appreciates the practical value of this study and thanks the International Health Division for making it possible.

To Dr. J. F. Kendrick, of the Foundation, whose painstaking and effective investigations are reflected in this study, the Department also wishes to extend its sincere appreciation.

I. C. Riggin, M. D., *Commissioner,*
Virginia Department of Health

PUBLIC HEALTH IN THE STATE AND COUNTIES OF VIRGINIA

I. INTRODUCTION

A. GENERAL CONSIDERATIONS

1. Description of the State

Virginia lies just south of the Potomac River between the parallels 36 degrees 30 minutes and 39 degrees 37 minutes north latitude, and between 75 degrees 15 minutes and 83 degrees 40 minutes west longitude. With a gross area of 42,627 square miles, of which 2,365 square miles are water, its area is about the same as that of Maine and New Hampshire combined and only 605 square miles greater than that of Tennessee. The State has a much indented coast line of nearly 800 miles on the Atlantic Ocean and the Chesapeake Bay, which receive many rivers with long tidal estuaries. The greatest distance from the Atlantic Coast to the western boundary is about 440 miles, and the extreme breadth of the State is about 200 miles. The area is crossed by three distinct physiographic provinces—the Coastal Plain, the Piedmont Plateau, and the Appalachian Mountain Province.

The Coastal Plain, or Tidewater Virginia, slopes gently seaward from an elevation of about 200 feet at the *fall line* of its three great rivers, the Potomac, the Rappahannock, and the James, to 20 feet or less near the seashore. The main drainage is into broad tidal estuaries extending southeastward across the plain, dividing it into several peninsulas. The two Virginia counties on the Eastern Shore of the Chesapeake Bay have physical characteristics very similar to, and are included as a part of, the Coastal Plain.

The Piedmont Plateau lies between the *fall line*, roughly indicated by a line drawn through Fredericksburg, Richmond, and Petersburg, and the Blue Ridge. This region contrasts with the Coastal Plain in its higher elevation and in possessing elevations which rise above its general level. Along the eastern slopes of the Blue Ridge, near the Carolina boundary, the general level of the Piedmont Plateau is 1,000 to 1,500 feet above sea level, and in the northern part of the State the elevation is 500 to 750 feet. The drainage of the Piedmont region is to the southeast by the Potomac, the Rappahannock, the James, and the Roanoke Rivers, and their tributaries.

The Appalachian Mountain Province embraces the Blue Ridge and Alleghany ridges with the Great Valley between. The latter extends from the Potomac on the north in a southwesterly direction and merges into the Plateau of Southwest Virginia. The topography of this area is characterized by sharp linear ridges extending northwest-southwest and separated by relatively broad valleys. The peaks of some of these ridges have elevations ranging upwards of 4,000 feet.

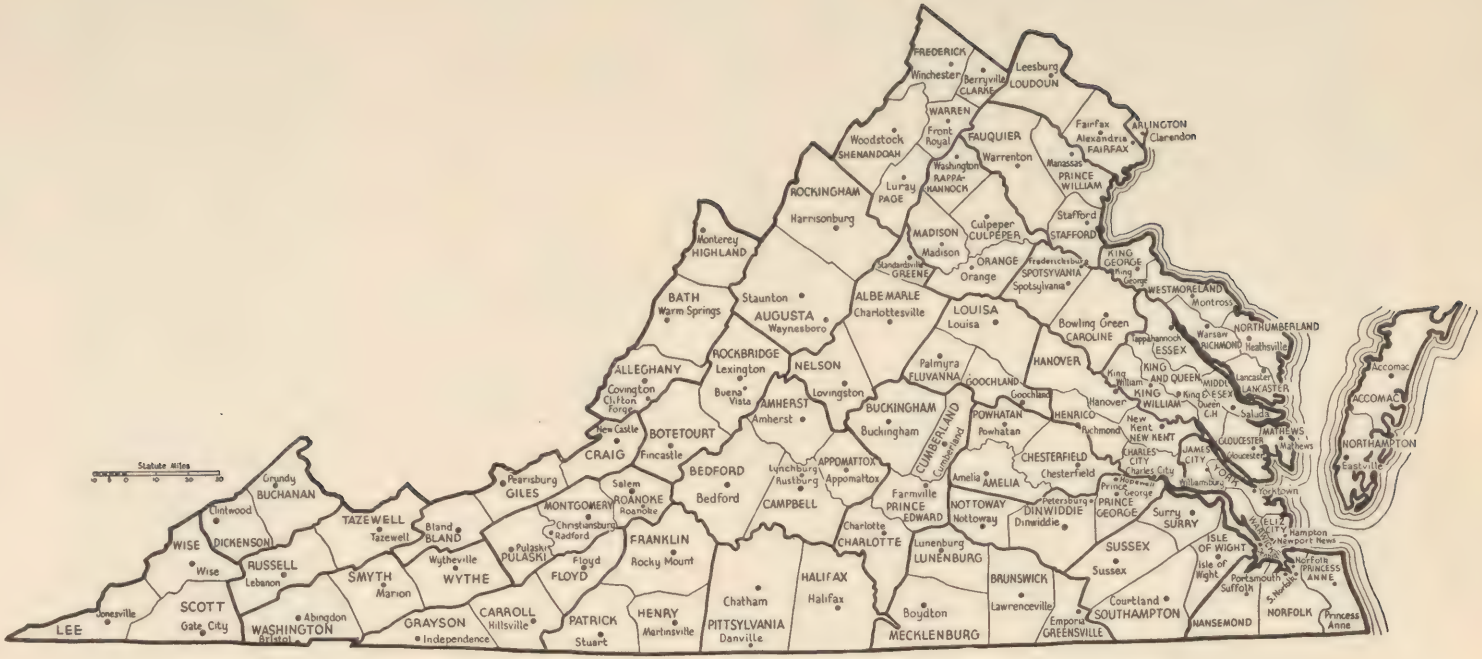
The Great Valley, including the southwestern Plateau, is drained by five great rivers, each with its separate valley. The northern third is drained by the Shenandoah River and other northeastward flowing tributaries of the Potomac. Drainage of the central part of the valley and ridge region is through the James and Roanoke Rivers which pierce the Blue Ridge on their eastward course to the Atlantic Ocean. The southwestern part of the valley and ridge province drains to the Gulf of Mexico through the New and Tennessee Rivers.

The climate of Virginia is remarkably free from sudden and severe extremes of heat and cold. Temperatures in various parts of the State are influenced by the large bodies of water along the coast and by the altitude in the west. The annual temperature of the State as a whole is about 58 degrees, and the annual average rainfall about 42 inches.

a. *Political Subdivisions.*—Virginia has one hundred counties, twenty-four independent cities, and, according to the 1930 census, 191 incorporated towns. In addition to these, each county is divided into magisterial districts, varying in number from three to ten. The location of the several counties may be seen from the accompanying map. Details with regard to the area, population, and assessed values of each county will be found in Table No. 1 of the attached appendix. Of the 100 counties, only two have areas as great as 1,000 square miles each. The average county area in the United States is 985.6 square miles. The average for Virginia is 402.2 square miles. All but two of the 100 counties have areas smaller than the national average, and fifty-two are below the average area for the State. Seventy-two counties have less than 500 square miles and four have less than 100.

Cities in Virginia are autonomous and independent of the counties in which they are situated, and, as such, county taxes do not apply within the boundaries of cities. All incorporated places are classified as towns and cities. All incorporated communities having within defined boundaries a population of 5,000 or more are known as cities, and such incorporated communities having less than 5,000 are known as towns. Due to certain constitutional and statutory provisions, however, Virginia has several towns with more than 5,000 inhabitants and at least two cities with less than 5,000 inhabitants. Towns are not independent of the counties in which they are located, and they are subject to both county and municipal taxation.

b. *Population.*—The estimated population of the State of Virginia as of July 1, 1936, was 2,459,180—the proportions of white and colored persons being 73.4 and 26.6 per cent, respectively. According to the United States Census of 1930 the total population of the State was 2,421,581, of which, 73.1 per cent were white, 26.8 per cent were Negro, and 0.1 per cent were other races. The average Virginia county has 17,189 inhabitants as compared with an average of 39,992 for the counties of the United States as a whole. Ninety-seven of the Virginia counties have fewer inhabitants than the national average, and fifty-nine counties have fewer than the average for the State. According to the 1930 census thirty-one counties had less than 10,000 inhabitants each. Of these, twenty-two counties had less than 8,000, and five had less than 5,000 inhabitants each. The percentage of Negroes in the



Outline map showing the 100 Counties into which the State of Virginia is divided

State's population has decreased from 31.6 in 1913 to 26.6 in 1936. The percentage of Negroes in the several counties (1930 census) varied from 0.4 in Craig County to 79.6 in Charles City County. The Negro population was 10 per cent or less in 25 counties, from 10 to 25 per cent in 18 counties, and from 25 to 50 per cent in 36 counties, and over 50 per cent in 21 counties.

Illiteracy among persons ten years old and over in the State was 5.0 per cent among the native whites, 7.4 per cent among the foreign-born whites, and 19.2 per cent among Negroes.

The 1930 census classifies 1,636,314, or 67.6 per cent of the State's population as rural, and 785,537, or 32.4 per cent, as urban. Of the rural population, 948,746, or 58 per cent were actually living on farms; and 687,568, or 42 per cent, were listed as rural non-farm residents.

The total number of gainfully employed persons in the State was 880,276, of which 270,836, or 30.8 per cent were engaged in agriculture; 207,207, or 23.2 per cent, were engaged in manufacturing and mechanical industry; 98,720, or 11.2 per cent were engaged in trade; and 92,577, or 10.5 per cent, were engaged in domestic or personal service. No other single occupation engaged as many as 10 per cent of the total of those gainfully employed.

The populations of the twenty-four cities of Virginia, as listed in the 1930 census, are as follows:

CITIES	Population 1930 Census	CITIES	Population 1930 Census
Richmond	182,929	Winchester	10,855
Norfolk	129,710	Suffolk	10,271
Roanoke	69,206	South Norfolk	7,857
Portsmouth	45,704	Martinsville	7,705
Lynchburg	40,661	Harrisonburg	7,232
Newport News	34,417	Clifton Forge	6,839
Petersburg	28,564	Fredericksburg	6,819
Alexandria	24,149	Hampton	6,382
Danville	22,247	Radford	6,227
Charlottesville	15,246	Buena Vista	4,002
Staunton	11,990	Bristol	3,840
Hopewell	11,327	Williamsburg	3,778

c. *Industries.*—Virginia's industry is varied: agriculture, manufacturing, mining, and fishing are important. The chief of these basic industries, however, is agriculture, and the welfare of the people of the State largely depends upon the prosperity of the farmers. The land area of the State is approximately 25,767,680 acres, of which 17,644,898 acres, or 68.5 per cent, were in farms in 1935. The number of farms increased from 170,612 in 1930, to 197,632 in 1935—an increase of 27,020 farms. In 1930 the average size of farms was 98.1 acres, as compared with 89.3 acres in 1935. The United States census of agriculture for 1935 shows that 121,490, or 61.5 per cent of all farms, were operated

by owners. White farmers operated 154,421 farms, and colored farmers operated 43,211. The value of farm lands and buildings in 1935 was $593,854,761, as compared with $855,849,672 in 1930. The principal crops grown are corn, tobacco, hay, wheat, peanuts, and truck crops. About 40 per cent of the cash farm income is derived from livestock and livestock products, poultry and dairying being large contributors. The United States Department of Agriculture estimated the gross income from crops and livestock in 1935 at $158,819,000. The addition of $3,188,000 as rental and benefit payments by the Agricultural Adjustment Administration brought the total income to $162,008,000.

The State produces great quantities of coal, and it has various building stones and commercial clays. The Chesapeake Bay fisheries yield a large proportion of the country's oysters and other fish. Transportation equipment works and other metal works, tobacco factories, and silk and cotton textile mills employ most of the industrial population; there are also many furniture factories and pulp and paper mills, dependent upon the State's extensive forests. Providing for tourists, vacationists, and health seekers also amounts to an industry, the State's historical places, scenery, seashore, mountain climate, springs, and natural wonders attracting thousands of visitors. In point of monetary value, tobacco leads, textiles and their products are second, and transportation equipment and repairs are third. The following table, compiled from the 1935-1936 report of the Department of Labor and Industry, indicates the importance of certain of these industries to the State.

INDUSTRY	Average Number Wage Earners	Total Wages Paid	Value of Products
Manufacturing	150,833	$ 110,413,751	$ 786,424,110
Public Utilities	8,429	12,642,700	38,575,669
Coal Mining and Coke	13,075	11,194,595	16,746,554
Services	4,624	2,914,989	7,059,303
Other Mining and Quarrying	2,727	1,612,364	5,193,101

d. *Transportation.*—The public highways in Virginia comprise two systems—the primary system and the secondary system. The primary system embraces approximately 9,225 miles of road of which about 7,400 miles are hard surfaced, and the remainder of which is conditioned. The secondary system of the State roads consists of all public roads that were previously under county jurisdiction, except those in three counties. These roads were taken over by the State Roads Commission under an Enabling Act passed by the General Assembly in 1932, as a means of relieving the counties of the financial burden of constructing and maintaining roads. The three counties of Henrico, Arlington, and Warwick specifically rejected the provisions of this

Act and continue to maintain their county roads. The roads coming within the scope of this Act total about 37,000 miles, of which more than 7,000 miles have been subjected to some type of surface treatment. These two systems constitute a network over which almost every community in the State is easily accessible by automobile. Funds for the construction and maintenance of State roads are derived principally from the gasoline tax, motor vehicle registration fees, and the Federal post roads subsidy. Expenditures for these purposes in 1936-1937 amounted to $26,086,867.14, or 36.4 per cent of the State's expenditures for all purposes. The policy of *pay as you go* which has been adopted by the State in constructing and maintaining its roads has obviated the accumulation of large road debts.

Railway facilities in Virginia compare favorably with those of almost any State in the Union, although there are fifteen counties without railway facilities actually within their boundaries. In all, there are thirty-one railroads operating in the State, but many of these are actually feeders or distributing lines of larger systems. Those operating the greatest mileage and serving the widest field in Virginia are: the Chesapeake and Ohio, the Virginian, and the Norfolk and Western, which traverse the State from east to west and have terminals at Hampton Roads; the Richmond, Fredericksburg and Potomac, which operates between Washington and Richmond, and connects with the Atlantic Coast Line and Seaboard Air Line railroads at Richmond; the main line of the Southern Railway which traverses the Piedmont section from Alexandria to Danville; the Norfolk and Western's Shenandoah and Radford division which passes through the *Great Valley*, from Hagerstown, Maryland, to Bristol, Virginia; and the Pennsylvania Railroad, connecting the Virginia port area with the north. Serving the southwest coal field are: a branch of the Norfolk and Western, the Louisville and Nashville, a branch of the Southern, the Carolina, Clinchfield, and Ohio, and the Interstate Railroad. Furthermore, the Hampton Roads ports are served by trunk lines of the Atlantic Coast Line, the Seaboard Air Line, the Norfolk-Southern, and the Southern, in addition to those already mentioned as having terminals in the port area.

The commerce of Hampton Roads is handled through two ports—the port of Norfolk, comprising the cities of Norfolk and Portsmouth, and Newport News. These ports are equipped with excellent piers, wharves, and railway terminals, including modern mechanical contrivances to facilitate loading and unloading, and warehouses for the storage of commodities. From these ports more than fifty steamship lines are engaged in foreign freight and passenger service to practically all important trade zones of the world. In addition, local and coastwise vessels supply transportation to and from the river and bay ports and to and from numerous ports on the Atlantic and Pacific Coasts and the Gulf of Mexico. The principal products handled through these ports include grain, petroleum products, cotton, tobacco, and fertilizers.

2. State Government

a. *General Division of Government.*—The present constitution of Virginia, exclusive of several amendments made principally in 1928, dates from 1902. Amendments to the constitution may be proposed in either house of the General Assembly, but to become a part of the constitution such amendments must be passed by both houses of that and the succeeding General Assembly and be approved by the majority of the votes polled at the next general election. The constitution provides for the three grand divisions of government, namely, the legislative, the executive, and the judicial, and specifies that they shall be separate and distinct except as therein provided.

Legislative power is vested in a General Assembly, consisting of a Senate of thirty-three to forty members and a House of Delegates of ninety to one hundred members. By 1927 the membership of both Senate and House had reached the maximum allowed by the constitution—forty senators and one hundred delegates. The State is divided into districts according to population, and senators are elected from each of these for four years and delegates for two years.

The General Assembly meets at Richmond on the second Wednesday in January of each even numbered year. The regular session of sixty days may be extended for a period not to exceed thirty days by a vote of three-fifths of the members of each house.

The chief executive power of the State is vested in the governor, who is elected by popular vote for a term of four years, beginning on the third Wednesday of January succeeding his election. The governor is ineligible to succeed himself.

The lieutenant governor is elected for a term of four years at the same time and in the same manner as the governor. He assumes the responsibilities of the chief executive in case of removal of the governor from office, or of his death, resignation, failure to qualify, removal from the State, or inability to discharge the powers and duties of the office. He presides over the Senate, but he is allowed to vote only when it is necessary to break an evenly divided ballot.

Bills passed by the Senate and House of Delegates must be presented to the governor before they can become laws. When the General Assembly is in session, such bills must be signed, vetoed, or returned for amendments, by the governor, within five days—Sundays excepted—otherwise they automatically become laws. A bill passed by the General Assembly and presented to the governor after that body adjourns must be signed within ten days after adjournment for it to become a law. Bills, or items of any appropriations, vetoed by the governor may be passed over his veto by a two-thirds vote of those present in each house of the General Assembly.

Constitutional amendments adopted by the people in 1928 permitted a complete reorganization of the State Government based on a survey by a commission appointed by the General Assembly. Of about one hundred boards, commissions, and departments, more than thirty were abolished and the rest were reorganized and consolidated into the governor's office and twelve administrative departments, namely,

the departments of: taxation, finance, highways, education, corporations, labor and industry, agriculture and immigration, conservation and development, health, public welfare, law, and workmen's compensation. The governor exercises control over these departments either by virtue of his power to appoint the directors or to supervise their work.

The governor's office consists of five major divisions: the division of the budget, the division of statutory research and drafting, the division of records, the division of military affairs, and the division of grounds and buildings. The directors of these five divisions are appointed by the governor, usually subject to the approval of the General Assembly, and are responsible for such duties as are implied by the enumerated designations.

The Virginia constitution provides that the judicial power of the State shall be vested in a Supreme Court of Appeals, circuit courts, city courts, and such other courts, inferior to the Supreme Court of Appeals, as are authorized, or may be established by law. The Supreme Court of Appeals consists of seven judges, but any three of them may hold a court or they may sit in two divisions of not less than three judges each except in cases involving constitutional questions. The judges are chosen for a term of twelve years by the joint vote of the two houses of the General Assembly.

The State is divided into thirty-four judicial circuits and in each of these a circuit judge is chosen for a term of eight years by a joint vote of both houses of the General Assembly. Similar to the court circuit is the corporation court in each city having a population of more than 10,000, the judge of which is chosen by a joint vote of both houses for a term of eight years.

b. *Educational Facilities.*—The State constitution provides that the General Assembly shall establish and maintain an efficient system of public free schools throughout the State, and that white and colored children shall be taught in separate schools. General supervision of the school system is vested in the State Board of Education which consists of seven members appointed by the governor, subject to confirmation by the General Assembly, to serve for a term of four years. The terms of office of the board members overlap so that each member holds office under two governors. The chief administrative officer of the State Department of Education is the superintendent of public instruction, who is required to be an experienced educator, and who is appointed for a term coincident with that of the governor making the appointment.

For administrative purposes the State Board of Education divides the State into appropriate school divisions which may not consist of less than one county or one city each, nor may a county or a city be divided in the formation of such divisions. During the school year 1936-1937, there were 109 divisions, of which 73 were composed of 1 county each, 11 of 2 counties, 1 of 3 counties, 22 of 1 city, and 2 of a city and a county. This consolidation of political subdivisions of the State for functional purposes appears to bear no relation to such functional consolidations as have been undertaken by other departments of

the State Government. The supervision of the schools in each county or city is vested in a school board composed of as many members as there are magisterial districts in the division, or wards in the city. The school board is appointed by a school trustee electoral board for a term of four years.

The administrative duties in each local school division are delegated by each local school board to a division superintendent, appointed by the board for a term of four years from a list of eligibles certified by the State Board of Education. To be eligible for appointment applicants must meet the minimum qualifications set up by the State Board of Education. These are considered strictly professional appointments, requiring successful teaching experience, professional training, and administrative ability.

During the year 1936-1937, there were 4,801 primary and secondary schools in the counties and cities of the State. Of these 2,268 were one-teacher schools and 633 high schools, 469 of which were fully accredited. Enrolled in the public schools were 587,486 pupils under the charge of 16,835 teachers, exclusive of supervising principals and supervisors. Based on the 1935 school census of 731,043, the 1936-1937 enrollment represented slightly over 80 per cent of the State's school population, or persons between 7 and 20 years of age. The average daily attendance for 1936-1937, was 488,692, or 83 per cent of the number actually enrolled. Attendance is compulsory for children between the ages of 7 and 15, except for those who live more than two miles from school. Compulsory attendance is applicable to the latter also, if transportation is provided within one mile of the child's home. The school term for the past few years has extended over a period of 170 days.

The average annual salary for all teachers (white and colored), including supervisors, principals, and special teachers in 1936-1937 was $841. The average salary for all teachers, excluding supervisors and supervising principals, was $613 in the counties and $1,232 in the cities. The State maintains a pension fund for retired teachers toward which each teacher contributes monthly a sum equal to 1 per cent of his salary. The maximum quarterly pension that may be paid to any teacher is $125.

The receipts for public school purposes from all sources in 1936-1937 amounted to $28,873,135.39, and expenditures to $25,747,668.80, of which $2,285,377.58 was for debt service. The several sources from which funds were received were as follows:

Source	*Amount*
The State	$ 7,447,144 93
Counties	7,202,783 36
Districts	1,045,119 11
Cities	6,116,504 83
Loans and bonds	2,529,456 46
Other sources	4,432,126 70
Total	$28,873,135 39

In addition to the public schools, there are four State Teachers Colleges for white women, one coeducational college for Negroes, and five other institutions of higher learning under State control, namely, the University of Virginia, College of William and Mary, Medical College of Virginia, Virginia Military Institute, and Virginia Polytechnic Institute. Under private control there are fourteen colleges, twelve junior colleges, twenty-two accredited secondary schools for girls and seventeen for boys, and twenty-four accredited coeducational secondary schools in the State. Virginia maintains two special schools for the deaf and blind, one for white children at Staunton and one for colored children at Newport News.

c. *Virginia Fiscal Affairs.*—Administration of the Virginia budget system is vested in the governor and the director of the division of the budget. Estimates of funds required for each year of the ensuing two years are submitted to the budgetary officers biennially by all State departments and institutions. These estimates are then studied by the governor, the director of the budget, and the governor's advisory commission on the budget, and a composite statement of the requests, with the recommendations of the governor, are sent to the General Assembly for legislative action. The bill, when passed by the legislature, fixes appropriations and becomes a law.

Under the reorganized State Government the Department of Finance embraces four divisions, namely, the division of accounts and control, the treasury, purchase and printing, and motor vehicles. Each of these divisions has a director appointed by the governor, subject to confirmation by the General Assembly.

The comptroller is the chief executive officer of the division of accounts and control. Under him there has been established a complete system of general accounting and control of all State funds, and all transactions in public funds must clear through his office. State funds in State depositories can be withdrawn only upon warrants issued by the comptroller, who is required to audit bills and to satisfy himself that all claims are just and lawful and have not been paid previously.

The State treasurer is custodian of all revenues collected for State purposes. All such funds are deposited direct to the treasurer of Virginia in State depositories protected by surety bonds or approved securities, and this money may be withdrawn only by check drawn upon warrant of the comptroller. The treasurer is custodian of securities required by statutes to be deposited by insurance companies under the Workmen's Compensation Act of Virginia; he handles all investments of the Literary Fund and Commonwealth investment funds for retired teachers. He is secretary of the State Finance Board composed of the governor, the comptroller, and the treasurer, which designates State depositories.

An amendment to the Virginia constitution in 1928 provided for practically complete separation of the sources of State and local revenue. With the exception of the rolling stock of public service corporations, it segregates real estate, tangible personal property, machinery and tools, and merchant's capital for local taxation only. Taxes on in-

tangible property, income taxes, certain corporation taxes, insurance and inheritance taxes, and several license taxes are reserved exclusively as revenues for the State. The State also levies an annual capitation tax of $1.50 on every resident in the State 21 years of age and over. This tax is a prerequisite to the exercise of suffrage. Two-thirds of the capitation tax is applied in aid of the public free schools, and one-third is returned by the State to the county or city in which it was collected, to be appropriated by the proper authorities to such purposes as they may determine. The total of all revenues collected and paid into the treasury for the fiscal year ended June 30, 1937, amounted to $78,823,888.12, as the following summary from the report of the comptroller shows:

CLASS OF REVENUE	Amount	Per Cent
1. Taxes	$ 35,879,389 59	45.5
2. Rights and privileges	10,093,621 96	12.8
3. Sales of property and commodities	16,922,981 90	21.5
4. Fees for miscellaneous services	157,142 98	.2
5. Assessments for support of special services	308,929 84	.4
6. Institutional	6,481,279 11	8.2
7. Interest, dividends, and rents	506,663 94	.6
8. Escheated properties	6,643 98	.....
9. Grants and donations	7,757,130 04	9.8
10. Fines and forfeitures	437,545 73	.6
11. Miscellaneous	272,559 05	.3
Total	$ 78,823,888 12	99.9

From the above table it will be seen that the revenues derived from taxation (items 1 and 2) amounted to $45,973,012, representing a per capita tax of $18.70[1]. Of the aggregate collections, $577,521.46 was returned to local governing bodies, in accordance with State laws, as a share of the capitation tax, motor vehicle fuel tax, etc. The actual amount of tax collected by the State Government for State purposes, therefore, was $45,395,491.

The total expenditures by the State during the fiscal year 1936-1937 amounted to $71,614,336. Highways and education represented by far the greatest burden upon the State treasury. The combined costs of these services amounted to $42,991,378, or 60 per cent of the total expenditures. One explanation for the very considerable outlay of State funds for highways is that the county roads in ninety-seven of the counties have been taken over as a secondary system of State highways by the State Department of Highways. This leaves only three counties to receive their respective shares of the motor vehicle fuel tax, the shares of the remaining ninety-seven counties being expended directly by the State. During the year 1936-1937 a total of $10,678,758.18 of the revenue collected by the State was earmarked for, or returned directly to, the localities, as follows:

[1]Based on an estimated population of 2,459,180.

For public free schools	$ 8,029,172 90
For county roads (3 counties)	266,585 52
For other purposes	2,382,999 76
Total	$10,678,758 18

The following table, adapted from the 1936-1937 report of the State comptroller, shows the total State disbursements with the percentage expended under each classification:

Expenditures of the Commonwealth of Virginia for the Fiscal Year 1936-1937

	Amount	Per Cent
Highways (total)	$ 26,086,867 14	36.4
Education (total)	16,904,510 59	23.6
Alcoholic Beverages Control Board	12,266,056 65	17.1
Public Welfare	4,432,851 20	6.2
Health	1,420,882 92	2.0
Debt service	1,406,561 06	2.0
Distribution of A. B. C. profits to localities	1,223,877 00	1.7
Department of Finance	1,179,545 05	1.6
Criminal expenses	1,158,568 81	1.6
Conservation Department	815,787 97	1.1
All other expenditures	797,153 71	1.1
Additions to capital funds	729,831 77	1.0
Assessment and collection of revenues	596,153 50	.8
Confederate pensions	582,798 62	.8
State Aid	577,521 46	.8
Agriculture	526,699 84	.7
Executive	409,736 67	.6
Judiciary	385,444 16	.5
Unemployment Compensation Commission	113,487 77	.2
Total	$ 71,614,335 89	100.0

Notwithstanding the magnitude of these comparatively large disbursements, there remained in the General Fund of the State treasury at the close of the year an unobligated cash surplus of $1,623,273.68.

Virginia's experience in financing the cost of public improvements, especially the development of railroads, prior to the war between the States, was such as to inculcate in future legislators a policy of extreme caution. To avoid the recurrence of unwise or unjustifiable borrowing, the constitution was amended in 1928 to provide that the General Assembly may contract debts only to meet casual deficits in the revenue, to redeem a previous liability of the State, to suppress insurrection, repel invasion, or defend the State in time of war. Indebtedness for any other purpose must, before authorization, be voted upon by the General Assembly and approved by the people at a general election. The constitution limits indebtedness for new capital outlay to 1 per cent of the value of all taxable real estate in the Commonwealth. This measure, with adoption of the plan of *pay as you go* in the maintenance and construction of highways, has prohibited the accumulation of massive

public debts and the accompanying debt service burdens. At the close of the fiscal year ending June 30, 1937, the outstanding bonded indebtedness of the State Government was $22,608,151, against which there were sinking funds totaling $5,006,782, leaving a net public debt of $17,601,369. This represents a per capita[1] net State debt of $7.15.

3. County Government

a. *Constitutional Form of County Organization and Government.*— The county is one of the units of local administration of the Commonwealth of Virginia. It also exercises some degree of local autonomy. The constitution defines the type of organization and government to which, prior to the constitutional amendment of 1928, each county was required to conform. This amendment authorized the General Assembly to provide by general law for complete forms of county organization and government, different from that provided by the constitution, to become effective in any county when submitted to the qualified voters thereof in an election held for such purpose and approved by a majority of those voting thereon. Accordingly, a somewhat modified form of government was provided in Chapter 167 of the Acts of 1930, and two complete optional forms in Chapter 368 of the Acts of 1932. Reference will be made to these later.

On January 1, 1938, ninety-seven of the one hundred counties continued to operate under the constitutional form of organization and government. All counties are divided into magisterial districts, varying in number from three to ten. From each of these districts certain officials or board members are elected by the qualified voters of such districts or are appointed by the circuit court or other appointive agencies. The constitution provides that one member of the board of county supervisors shall be elected from each of these districts, and, under State laws, each district may elect three justices of the peace, one constable, and one overseer of the poor, all for a term of four years. All other elective officers are chosen by a county-wide poll and not by the electorate of separate districts. The following table classifies the county officials under this form of government in terms of number, the tenure of office, constitutional or statutory, elected or appointed, and by whom appointed:

	Number	Term Years
I. Constitutional Officials		
a. Elected		
County Board of Supervisors	3–10	4
Commissioner of Revenue	1	4
Treasurer	1	4
Clerk	1	8
Commonwealth Attorney	1	4
Sheriff	1	4
Justice of the Peace	.....	4

[1]Population basis 2,459, 180.

	Number	Term Years
b. Appointed by Circuit Court		
Surveyor	1	4
County Electoral Board	.....	3
c. Appointed by County Electoral Board		
Precinct Registrars	.....	2
Judges of Elections	.....	.....
Clerks (election)	.....	.....
d. Appointed by School Trustee Electoral Board		
County School Board	3–10	4
e. Appointed by County School Board		
Division Superintendent of Schools	1	4
II. Other Elected Officials (Statutory)		
Constables (by districts)	3–10	4
Overseers of the Poor (by districts)	3–10	4
III. Appointed Officials (Statutory)		
a. Appointed by Circuit Court		
Trial Justice	1	4
Commissioner of Accounts	1	.....
Commissioner in Chancery	.....	.....
Jury Commissioners	25	1
School Trustee Electoral Board	3	4
Coroner	1	4
b. Appointed by Governor		
Notaries Public	.....	.....
c. Appointed by State Tax Commissioner		
Inheritance Tax Commissioner	1	.....
Examiner of Records	1	4
d. Appointed by Commissioner of Game and Inland Fisheries		
Game Warden	1	.....
e. Appointed by County Supervisors		
County Health Officer	.....	.....
Superintendent Public Welfare	1	.....
County Agent	.....	.....
f. Appointed by the State Board of Health		
County Board of Health	3	1

The county board of supervisors consists of a member from each of the magisterial districts into which the county is divided, elected for a term of four years. Each member receives a nominal salary and a modest traveling allowance. The board of supervisors is generally considered the head of county government, although with its power of appointment restricted, and with functions of county administration dispersed among numerous other elected officials, it has little direct control over most of the county officers. The duties of the board of supervisors are numerous—including the preparation of the county budget, determining the tax rate, making appropriations, supervising the construction and maintenance of public buildings, auditing claims against the county, except claims required to be audited by the county school board, and the issuing of warrants in settlement of valid claims.

As has been stated elsewhere, the construction and maintenance of public roads has been taken over by the State, and the public free schools are operated by the county school board under the general supervision of the State Board of Education.

b. *Optional Forms of County Organization and Government.*—The constitution of Virginia was amended in 1928 to permit the legislature, regardless of the many cumbersome specifications for a decentralized system of county government, to set up alternative plans of county government. The legislature, following the advice of the Virginia Commission on County Government, made the county manager and county executive forms of government optional with any county of the State. The plan adopted is one strictly in accordance with local self government. It removes the constitutional restrictions imposed upon the counties and opens the door to progressive reform in a county government.

The Act[1] provides two forms of county organization and government—the county executive form and the county manager form. Either form may be adopted in any county when submitted to the qualified voters thereof in an election held for the purpose and approved by a majority of those voting thereon. Each form provides for the election of a board of county supervisors by the county at large, the board to consist of one member from each magisterial district, provided the number of districts is not less than three nor more than seven. Each form also provides for the election by the voters of the county of a clerk, a sheriff, and an attorney for the Commonwealth. The principal, and practically the only, difference in the two forms is that under the county executive form the board of supervisors appoints the county executive and all other appointive officers, whereas, under the county manager form the board appoints the county manager and the appointment of all other county officials is left to the county manager. Both forms abolish the offices of county surveyor, coroner, superintendent of the poor, overseers of the poor, constables, the school trustee electoral board, and the inheritance tax commissioner. The number of justices of the peace is reduced to one for each magisterial district, and the jury commissioners, the examiners of records, notaries public, and election officials remain unaffected.

At the beginning of 1938, Arlington County was operating under a county manager form of government, set forth in an Act of 1930, under the provisions of which constitutional elective officers are retained; Albemarle County was operating under the county executive form; and Henrico County was operating under the county manager form of government. The remaining ninety-seven counties were continuing under the constitutional form of government.

Each county adopting the county executive form or the county manager form is required to establish and maintain the following seven governmental departments: finance, public works, public welfare, law enforcement, education, records, and health. In addition, each county board may create a department of assessments and a department of farm and home demonstration.

[1]Chapter 368, Sections 2773N to 2773-N56, 1932.

County executives and county managers are appointed for indefinite terms by the respective county boards of supervisors. The appointments are made with regard to merit only, and they are not restricted to persons who are county residents at the time of their appointment. Upon assuming office the county executive or the county manager, as the case may be, becomes the administrative head of the county government, responsible to the board of county supervisors for the proper administration of all the affairs of the county which the board has authority to control. A county executive or a county manager is removable from office at the pleasure of the board of county supervisors.

II. STATE AND COUNTY HEALTH ORGANIZATIONS

A. INTRODUCTION

Official public health activities in the State of Virginia are conducted both by the State and by its political subdivisions, the counties and cities. Unlike the counties, cities are established under separate charters which, among other things, provide for the protection of the public health. The concentration of people and of wealth within small areas which is characteristic of cities, makes it possible and desirable that these local governments should finance and administer their own health activities with as little assistance or interference from the State as possible. In rural areas, on the other hand, the people are widely scattered, have far less taxable wealth, and sufficient funds to provide adequate public health facilities, which are relatively more costly than in cities, often are not available. For these reasons it has been the policy of the State to leave health administration in cities in the hands of their respective governments, but to stimulate and promote health work in rural areas both by granting financial assistance and by providing a central staff of administrative and technical experts to advise county health officials and to direct and coordinate their health programs. In certain instances cities and counties unite and conduct their activities on a cooperative basis. Under such circumstances the city, as well as the county, would receive the benefit of State aid and the local health officer would be responsible to the State Commissioner of Health.

Since it is intended to deal here only with the organization and administration of the State Department of Health and with those of such local organizations as the State Department is directly concerned, all reference to city health departments will be incidental.

B. THE CENTRAL HEALTH ORGANIZATION

1. The State Board of Health

An Act[1] creating the State Board of Health of Virginia was passed by the General Assembly in 1872 and was approved by the governor on February 13th of the same year. This State, therefore, was the third in the United States to create such a board. The membership of the board as provided by that legislation consisted of seven physicians,

[1]Chapter 91, Acts of the General Assembly, 1872.

appointed by the governor for a term of four years. Among the prescribed duties of the board were: to communicate with the local boards of health, the hospitals, and public institutions throughout the State, to take cognizance of the interests of health and life among the citizens generally; to make sanitary investigations and inquiries respecting the causes of disease; to devise some scheme whereby medical and vital statistics of sanitary value might be obtained, and act as an advisory board to the State in all hygiene and medical matters; and to make an examination of and report upon the effect of the use of intoxicating liquor as a beverage upon the industry, happiness, health, and lives of the citizens of the State. The board was required to elect a permanent secretary, who, as its executive officer, was to perform and superintend the work prescribed in the Act, although the law made it clear that the Board should in no way be a charge upon the State.

An Act passed in 1900[1] provided for a State Board of Health consisting of seven members appointed by the governor upon the recommendation of the Medical Society of Virginia. The salary of the secretary was to be fixed by the board. No salary was provided for the other board members, but each was allowed four dollars a day, plus the traveling expenses incurred, while engaged in the discharge of his duties. The total annual expenses of the board were not to exceed $5,000.

This Act provided also for the appointment of boards of health in every county and city in the State, each board consisting of three regularly licensed physicians of the county or corporation, the clerk, and the chairman of the board of supervisors of the county, or the mayor of the corporation. Appointment of the three physicians was to be made by the judge of the county or corporation court upon the recommendation of the local medical society. Where a city or county failed to appoint a board the State Board of Health was authorized to perform the required duties and to charge the expenses incurred to the local government.

In 1908[2] the membership of the board was increased to twelve. Appointments, restricted to members of the State Medical Society, were made by the governor for terms of four years. Provision was made for the appointment of a commissioner by the governor for a term of four years. The commissioner, who was to serve as the executive officer of the board but was not to be a member of the board, was required to be versed in bacteriology and sanitary science and otherwise fitted and equipped to execute the duties incumbent upon him by law. The commissioner was authorized to appoint an assistant commissioner, a skilled bacteriologist, and other assistants and clerks, with the approval of the board. Section 4 of this law required the State Board to establish suitable laboratories in Richmond for the free examination of clinical material submitted by the medical profession of the State, and an appropriation was granted the board for the erection of buildings for the treatment of tuberculosis. The total annual allotment for all purposes was $40,000.

[1]Acts of 1900, Chapter 1146.
[2]Acts of 1908, Chapter 361.

Without further changing its membership, Chapter 179 of 1910 enlarged the powers of the board by authorizing it to make, adopt, promulgate, and enforce reasonable rules and regulations for the protection of the public health.

In 1916[1] the membership of the State Board of Health was increased to fourteen by the appointment of two members from the State at large, one of which was to be a member of the State Dental Association. This arrangement persisted until 1920[2], when the law was amended so as to require that at least five of the fourteen members of the board should be members of the Medical Society of Virginia.

The law[3], as it now stands, provides for a board of seven members, one to be chosen from each of the five grand divisions of the State—Tidewater, Middle Virginia, Piedmont, the Valley, and Southwest Virginia—and two from the State at large. At least two appointees must be members of the Medical Society of Virginia and one a member of the State Dental Association. Appointments are made by the governor for a term of seven years, and one term expires annually. Vacancies are filled in the same manner as original appointments are made.

The State Board of Health is required to meet annually in Richmond, and at such other times and places as it may determine. An executive committee, consisting of three board members, usually transacts any business required of the board that may arise between the annual meetings. The members of the board receive no salary, ". . . but each member shall be paid a per diem of eight dollars for the time actually engaged in the discharge of his duties, together with his actual expenses incurred therein, to be paid out of the board's funds."

Powers and Functions of the Board

Under the authority of legislative enactments the State Board of Health has certain powers and functions which may be enumerated as follows:

1) "The State Board of Health shall have the power to make, adopt, promulgate, and enforce reasonable rules and regulations from time to time requiring and providing for the thorough sanitation and disinfection of all passenger cars, sleeping cars, steamboats and other vehicles of transportation in this State, and also of all convict camps, penitentiaries, jails, hotels, schools, and other places used by or open to the public; to provide for the care, segregation and isolation of persons having, or suspected of having, any communicable, contagious, or infectious disease; to regulate the method of disposition of garbage, or sewage and any like refuse matter in or near any incorporated town, city, or unincorporated town or village of this State; to provide for the thorough investigation and study of the causes of all diseases, epidemics and otherwise in this State, and the means for the prevention of contagious disease, and the publication and distribution of such information as may contribute to the preservation of the public health, and the prevention of disease; to make separate orders and rules to meet any emergency, not provided for by general rules and regulations, for the purpose of suppressing nuisances dangerous to the public health and communicable, contagious, and infectious diseases and other dangers to the public life and health; provided, however, that nothing herein contained shall be con-

[1]Acts of 1916, Chapter 192.
[2]Acts of 1920, Chapter 106.
[3]Acts of 1924, Chapter 234.

sidered as in anywise preventing or restricting any person so segregated or isolated from choosing his own method of treatment, or in any wise limiting any diseased person in his right to choose or select whatever method or mode of treatment he may believe to be the most efficacious in the cure of his ailment; provided, however, that nothing herein contained shall be construed as in anywise limiting any duty, power or powers now possessed by or heretofore granted to the State Board of Health by the statutes of this State, or as affecting, modifying or repealing any rule or regulations heretofore adopted by said Board." (Chapter 179, Acts of 1910.)

2) "The State Board of Health shall prepare and promulgate from time to time a list of diseases considered as infectious, communicable or dangerous, and prescribe the manner and time of reporting the same to the State Board of Health." (Chapter 66, Acts of 1910).

3) "The Board shall establish and maintain in the City of Richmond suitable laboratories for the examination of clinical material submitted by members of the medical profession of the State, and such examination shall be made free of charge." (Section 4, Chapter 361, Acts of 1908, Code, Sec. 1491).

4) "The Board shall also make research and studies of infectious diseases, of epidemics, and of methods of preventing and curing diseases. It shall forthwith make inquiry into the altitude, moisture, and other climatic conditions in various parts of the State and . . . the Board shall begin the erection and maintenance of temporary buildings or camps for the treatment of tuberculosis in such localities as are proper, and at such sanatoriums they shall provide for the treatment by the most advanced methods of the tuberculosis patients in the State at a minimum expense to the patient." (Code, Section 1491).

5) "The State Board of Health shall annually appoint three residents of each county or corporation, at least one of whom shall be a regularly licensed physician, who shall, with the county clerk and the chairman of the board of supervisors, or the mayor of the corporation, as the case may be, constitute a county, town, or city board of health; but where the charter of any city or town already provides for the creation of a board of health, the provisions of this section shall not apply." (Virginia Code, Section 1492).

6) "If any city, town, or county authorized by law to appoint a local board of health or health officer omit to do so, the State Board of Health may exercise the authority and perform the duties . . . until such local board of health be established or such health officer be appointed." The expenses incurred by the State Board shall be charges upon the city, town, or county.

7) "If any case of infectious, contagious, communicable or dangerous disease be reported as existing in any locality in the State, the State Board of Health, shall, as soon as possible, investigate said disease. It shall then confer with the local health authorities and make such suggestions as it may deem proper. If these suggestions are not carried out, and the disease is, in the judgment of the State Board of Health, in danger of spreading to another city, town, or county, the said State Board of Health, or its executive officer, subject to the action of the said Board, shall have the right to assume exclusive control of the disease, . . . ". (Code, Section 1497).

8) "The State Board of Health shall have charge of the registration of births and deaths . . . The said Board shall be charged with the uniform and thorough enforcement of the law throughout the State, and shall from time to time promulgate any additional forms and amendments that may be necessary for the purpose." (Code 1919, Section 1561).

9) "The State Board of Health shall have general supervision over the bureau of vital statistics, heretofore established by said board, and which shall be under the immediate direction of the State Registrar of Vital Statistics." (Code, 1919, Section 1562).

10) "The State Board of Health shall have general supervision and control over all water supplies and water works in the State in so far as the sanitary and physical quality of waters furnished may affect the public health and comfort." (Section 2, Chapter 360, Acts of 1916).

2. The Commissioner of Health

The office of commissioner of health was created by Act[1] of the General Assembly in 1908, since when the position has been held by only three executives. The commissioner is appointed by the governor for a term of four years. He serves as executive officer of the State Board of Health but he is not a member of that board. Legally[2], the appointee shall be a physician, a graduate of a medical college, which is now, or was at the time of his graduation, recognized by the Virginia State Board of Medical Examiners as a college giving proper instruction. He shall be skilled and experienced in the administration of public health duties and versed in sanitary science, and otherwise fitted and equipped to execute the duties incumbent upon him by law. In addition to having had ample experience in public health administration, the present commissioner holds the degree of Doctor of Public Health from the Johns Hopkins School of Hygiene and Public Health.

The commissioner is required to reside and have his headquarters in the City of Richmond, and to devote his entire time to his official duties.

The powers and duties of the commissioner as prescribed by law[3] are as follows:

1) The Commissioner shall perform such duties as the State Board of Health may require, in addition to the other duties required by law.

2) He shall be vested with all the authority of the Board when it is not in session, and subject to such rules and regulations as may be prescribed by the Board.

3) It shall be his duty to institute and, together with his assistants, to carry out such a course of lectures and demonstrations as he may deem advisable in various sections of the State and in the State educational institutions, to the end that the medical profession and the people of the Commonwealth may be instructed in manners of hygiene and sanitation.

4) To furnish to the Governor and to the General Assembly, when in session, such information as may from time to time be required.

5) To make an annual report to the Governor of all expenditures made by the State Board of Health, by himself, and of persons under him.

6) The Commissioner, with the approval of the State Board of Health, shall appoint and may employ such clerical and other assistants as are necessary for the proper performance of his duties as executive officer of the State Board of Health. The salaries of assistants and employees shall be fixed by the State Board of Health. All persons appointed by the Health Commissioner shall be primarily responsible to him and may be removed by him for good cause. (Code 1936, Section 1490).

7) The Commissioner is specifically charged with the duty of exercising sanitary control over the harvesting, handling, storing, packing, and marketing of fish, shellfish, and crabmeat in the State.

[1]Acts of 1908, Chapter 361.
[2]Code, 1936, Section 1489.
[3]The Virginia Code, 1936, Section 1489.

3. The State Department of Health

The early establishment and the continued maintenance of a State Board of Health has been discussed at some length. Active health work under that board was largely restricted to the control of epidemics, principally of smallpox, and the dissemination of limited quantities of health literature. As scientific knowledge concerning the control of preventable diseases became more general, however, and the ineffectiveness of such health measures as had been undertaken formerly was recognized, the General Assembly of 1908 provided for what is now known as the State Department of Health. Under that legislation the personnel of this new department was to consist of a commissioner, an assistant commissioner, a bacteriologist, and a clerk. Moreover, the commissioner was authorized to appoint, with the approval of the State Board of Health, such assistants as may be necessary for the proper performance of his duties as the executive officer of the board. With this nucleus as a start, the growth of the department has been gradual but continuous and, at present, it consists of: the commissioner of health and ten departmental bureaus, and four bureau divisions as follows: (See page 105 for organization chart).

Departmental Bureaus	*Bureau Divisions*
Bureau of:	Division of:
a. Administration	Health Education
b. Rural Health	Tuberculosis Outpatient Service
c. Communicable Diseases	Venereal Disease Control
d. Public Health Nursing	Mouth Hygiene
e. Crippled Children	
f. Industrial Hygiene	
g. Sanitary Engineering	
h. Vital Statistics	
i. Maternal and Child Health	
j. Laboratories	

Prior to the establishment of a State Department of Health, the State Board of Health constituted the only State health organization. Many of the present health laws were formulated and enacted with the idea that they were to be administered by the State Board of Health, and through them the board still is vested with full administrative authority. With the appointment of a commissioner, however, and with the establishment of several technical bureaus, practical administrative considerations have made it essential for the board to function more and more as an advisory and policy forming body and to relinquish its administrative authority to its trained executive officer.

The offices and the central laboratories of the State Department of Health are located in the State office building at Richmond.

The bureaus of which the State Department of Health is composed, and such divisions of these bureaus as now exist, are described in the following sections:

a. *The Bureau of Administration.*—The commissioner of health is the director of the Bureau of Administration which, as at present organized, consists of the bureau proper, and the Division of Health Edu-

cation. The personnel of the bureau proper includes the commissioner, an administrative assistant, an executive secretary, a statistical assistant, a stenographer-clerk—in charge of the sale (at cost) and distribution of arsenicals and biologicals to the physicians of the State—and four clerks including a telephone operator. The functions of the bureau include:

1. The formulation of the general policies of the department.
2. General supervision of the department and enforcement of the public health laws and the rules and regulations of the State Board of Health.
3. Coordination of the activities of the bureaus and divisions.
4. Administration of the three State tuberculosis sanatoria.
5. Supervision over department finances (including those of all cooperative county health departments), preparation of the budget, control of expenditures, accounting and recording of all financial transactions.
6. Purchase, through the division of purchase of the State Department of Finance, of all departmental supplies and equipment, etc.
7. Purchase, and distribution of biologicals and arsenical preparations to physicians of the State at cost.
8. Receipt and dispatch of all department mail, parcels, etc.
9. Keeping records of vacations, sick leave, etc.
10. Rendering specialized statistical services to bureaus and divisions.
11. Maintaining relations with other departments of the State Government, with the United States Public Health Service, and other Federal agencies, and with non-official organizations.

Since the State of Virginia does not maintain a civil service, the duty of selecting properly qualified technical assistants for employment in the department devolves upon the commissioner, but when desirable, he, of course has the advice of directors of the several bureaus. The selection of clerical and other non-technical employees may be made by the commissioner upon the recommendation of certain members of the staff of the department. Official employment of an applicant is made by the commissioner, with the approval of the State Board of Health. If, however, the monthly salary of a prospective employee is $100, or more, the permission of the governor must be obtained before such an employee may be placed on the State payroll.

Employees are allowed an annual vacation of twelve working days for each year of service, provided, however, that no employee is eligible for any vacation who has not served in the department for at least six months. In calculating vacation periods each Saturday is considered a half day, and legal holidays are not counted. Sick leave, amounting to twelve working days during each calendar year, is allowed. Additional sick leave, either with or without pay, may be obtained only with the approval of the commissioner of health.

The State provides the commissioner with an automobile and pays such traveling expenses as he may incur in the performance of his official duties. Other members of the staff of the department traveling out of Richmond by automobile on official business are allowed five

cents per mile. Except under unusual circumstances, employees traveling on trains are expected to use coaches, and reimbursement is granted on that basis. Reasonable charges for meals and hotel rooms also are permissible.

The department supplies no free drugs or biological supplies either to physicians or to county health departments for the treatment or immunization of any elements of the population whatever, except drugs for the treatment of syphilis which are supplied to all physicians on request. Such products are purchased at favorable rates and supplied to localities at cost, but never free.

1) The Division of Health Education.—The present Division of Health Education was organized in September, 1936, as a division of the Bureau of Administration. The personnel consists of a chief of the division and a librarian.

Considerable emphasis had been placed on health education by the department since 1910, and creditable results had been accomplished through the efforts of the various publicity officers and the directors of the several bureaus. Withal, however, no regular full-time staff officer had been employed to systematize and develop a health education program for the department until the present division was established.

The program of the division, which is still in its formative stage, includes the following activities:

1. *Virginia Health Bulletin.*—The division prepares, has printed, and distributes each month an edition of a health bulletin designed to meet the needs of the general public, and illustrated with appropriate pictures and cartoons. It is regularly circulated to more than 10,000 of Virginia's approximately 2,500,000 inhabitants. Included among the recipients are all of the State legislators and principal public officials, all physicians and dentists, and many nurses, social workers, school teachers, and other citizens.

2. *Weekly Health Talks.*—The division releases, through the commissioner, a weekly health talk as a regular syndicated feature to all newspapers in Virginia. In the preparation of these talks controversial subjects are avoided, technical terms are reduced to a minimum, and advice regarding treatment is left to practicing physicians.

3. *Press Releases.*—The division supplies news items for local newspapers, for the Associated Press, and for the International News Service.

4. *Health Information Bureau.*—Health information is supplied from this office in response to numerous queries from schools, colleges, and the general public. This service includes the loan of numerous books and periodicals from the department's library.

5. *Miscellaneous Activities.*—The services of the division are available to members of the staff of the State Department of Health and to county health officers who wish to have their reports, scientific articles, or addresses edited prior to publication or delivery; it edits the department's annual report; revises, rewrites, and re-edits health pamphlets; assists in the preparation of exhibits; assists in the preparation of routine news items, that are sent out from time to time, dealing with the activities of the State Department of Health. Radio and motion picture facilities have not been utilized to an appreciable extent as yet.

b. *The Bureau of Rural Health.*—During the period 1910 to 1932 State Department activities concerned with rural health were pursued

by bureaus under several different designations, such as the bureau of rural sanitation, bureau of inspections, bureau of sanitary demonstration, bureau of tuberculosis, and others. From activities principally involving the control of hookworm infection and the protection of rural water supplies from contamination with human discharges, the work has expanded into generalized programs of disease prevention and health promotion requiring well organized, full-time, local health departments to administer them. With the growth and development of these local units the need of a single responsible agency in the central office of the department to direct and coordinate county work for the State as a whole became increasingly apparent, and general direction was consolidated, in 1932, under the Bureau of Rural Health. As a part of this reorganization scheme the Division of Tuberculosis Out-Patient Service was made a division of the Bureau of Rural Health.

The authorized personnel of the bureau consists of a director, two assistant directors, three supervisors of rural sanitation, one milk sanitarian, two secretary stenographers, and one clerk.

The duties of the Bureau of Rural Health, as defined in the State Department's Bulletin of September, 1933, and revised to conform with present practice, are to:

1. Organize new county health departments and secure initial appropriations.
2. Assist counties in securing competent personnel, and appraise the qualifications of personnel.
3. Render advice to county health departments and county authorities in matters of public health administration.
4. Assist in the development of a program for local public health activities.
5. Maintain the policies, standards and program of the State Department of Health as applied to local health work.
6. Maintain the administrative, technical, and professional supervision over local health organizations that the State Department of Health exercises.
7. Review programs and evaluate services of local health departments for the State Department of Health, the extra-state contributing agencies, and local appropriating bodies.
8. Prepare and submit reports of activities and accomplishments of the local health departments to the contributing and appropriating agencies.
9. Represent the State Department of Health and all extra-state contributing agencies in financial, technical, and administrative affairs.
10. Approve budgets and expenditures for local health work.

To enable the bureau to perform these duties as efficiently as possible, the director has assumed personal responsibility for certain duties relating to all counties in the State, both organized and unorganized. These include: policy determination, matters relating to personnel, relations with other bureaus of the State Health Department, relations with counties not having health departments, development of new departments, and administration of the tuberculosis out-patient service. Other bureau responsibilities have been assigned to the two assistant directors and, for administrative purposes, one officiates in the counties

with organized health departments in Southwest Virginia and the other in the organized counties in the rest of the State.

The three sanitation supervisors employed by the bureau are engaged in supervising the work of sanitation officers employed by the various county or district health departments throughout the State. They also supervise similar work that is being undertaken under WPA auspices in counties where there are no organized health departments. Prior to 1937 this work principally consisted of the construction and maintenance of sanitary privies, and the protection of wells or other water supplies in rural areas. More recently the attention of these officers has been directed toward food sanitation and the sanitation of food establishments. Such work is being satisfactorily undertaken in eighteen counties. The first-mentioned activities are undertaken under the State Sanitary Law. (Ch. 465, Acts of 1924, as amended by an Act approved March 15, 1926). This law has been accepted and may be enforced in sixty-five counties of the State. The sanitation of food and food establishments is being promoted in suitable localities by inducing local authorities to adopt and enforce ordinances which have been prepared for the purpose by the Bureau of Rural Health.

Until very recently the sanitation officers attached to this bureau, as well as those on the staffs of county and district health departments, have been laymen especially trained for these positions. To qualify for these appointments in the future, however, all applicants must be graduate engineers.

The duty of safeguarding the sanitary quality of milk and milk products in the State is a responsibility of the State Department of Agriculture (Ch. 155, Acts of 1934). The provisions of this Act do not apply to persons keeping two milch cows or less, nor to cities and towns which have ordinances regulating the protection and distribution of milk and cream with provisions more rigid than those incorporated in this Act. In view of the importance of a safe supply of wholesome milk to the public health of a community, the Bureau of Rural Health added a milk sanitarian to its staff in February, 1935. The purpose of this step was not to augment the work of the dairy and food division of the Department of Agriculture, but to supplement that work by promoting the adoption and enforcement of effective milk ordinances by large communities in counties and districts that are served by full-time health departments. Counties without organized health services are not included in this program because of the lack of local machinery necessary to insure the uniform application of ordinance requirements. Activities on a full-time basis are being conducted in fifteen communities, the standard milk ordinance of the United States Public Health Service having been adopted by twelve.

1) The Division of Tuberculosis Out-Patient Service.—Up until 1932, field control of tuberculosis was conducted successively under the Bureau of Tuberculosis Education (1914 to 1920) and the Bureau of Tuberculosis Out-Patient Service (1921 to 1932). In 1932 the latter bureau was discontinued, as such, and the retrenched staff was transferred to, and became a division of, the Bureau of Rural Health. With

this change, responsibility for active tuberculosis control measures was assumed by county health departments as a part of their generalized programs, and the nursing services of this division were restricted to counties without organized health services.

While the Bureau of Rural Health exercises general supervision over the Division of Tuberculosis Out-Patient Service, the Bureau of Public Health Nursing renders aid by supervising the activities of the tuberculosis nurses, by planning their schedules, and by maintaining the State tuberculosis register of deaths, active cases, suspected cases, persons living in contact with cases, of infected cases moving from one locality to another, and of all cases discharged from sanatoria.

The personnel of the division consists of two clinicians, one supervising nurse, eight district nurses, two x-ray operators, two stenographers, and three clerks—a total of seventeen.

The program as now carried out includes a diagnostic service available to every county in the State, and a follow-up nursing service available to those counties that have no organized health services. In counties with health departments such service is undertaken by nurses on the local staffs. The diagnostic service provides chest examination, x-ray examinations, tuberculin tests, and consultation service. These examinations are undertaken by the clinicians only at the request of a physician. No treatment is ever given, and all opinions and advice in regard to cases are transmitted to the family physician immediately after each clinic.

c. *The Bureau of Communicable Diseases.*—This bureau was organized in 1923 and functioned for about three years as the Bureau of Epidemiology. In July, 1926, the director assumed responsibility, also, for supervision of cooperative county health units in Eastern Virginia and of the malaria bureau. With the resignation of the director on July 1, 1932, his successor was appointed and placed in charge of the Bureau of Epidemiology, without the additional duties mentioned above. The designation of the bureau was changed to the Bureau of Communicable Diseases in 1935.

The personnel of the bureau consists of a director—the State epidemiologist—an assistant epidemiologist, a secretary-stenographer, and two clerks. The Division of Venereal Disease Control, discussed below, is a division of this bureau.

The functions of the bureau include: the collection, tabulation, and analysis of reports of communicable and preventable diseases that occur in the State; the investigation of all outbreaks of unusual prevalence of communicable diseases to determine the source of infection and to institute control measures; the provision of a free consulting diagnostic service, upon request, to physicians and health officers throughout the State; the promotion and direction of field studies to determine the immunity status of various population groups in the State with reference to certain communicable diseases, and to determine the most satisfactory immunizing agents and the best methods of administering them; the direction of epidemiological, bacteriological, and serological studies of certain endemic diseases in order to advise methods

for their prevention; cooperation with local health departments in the preparation of programs for the control of communicable diseases; the compilation of current information concerning communicable diseases that is of interest to the public and of general educational value; and general oversight of the program and activities of the Division of Venereal Disease Control. The more extensive special studies that have been undertaken thus far have related to diphtheria, dysentery, and smallpox. Activities to determine the status of the typhoid carrier and the prevalence of different types of pneumococci in various sections of the State have just been arranged for.

The relation of this bureau to local health authorities is an advisory one. The law[1] makes it mandatory for the State Board of Health to investigate outbreaks of communicable diseases, to confer with the local health authorities, and to make such suggestions as it may deem proper. If these suggestions are not carried out, and the disease is, in the judgment of the State Board, in danger of spreading to another city, town, or county, the said State Board of Health, or its executive officer, subject to the action of the said board, shall have the right to assume exclusive control of the disease. Under ordinary circumstances, however, disinfection, isolation, and quarantine are undertaken either by local health authorities or by the family physicians.

Chapter 66 of the Acts of 1910 requires ". . . that every physician practicing in the State who shall know or suspect that any person whom he or she is called upon to visit, or who comes to him or her for examination or treatment, is suffering from any infectious, contagious, communicable and dangerous disease shall make report in writing on blanks to be furnished for that purpose by the State Board of Health, to the executive officer of the Board of Health of the county, town, or city in which such person may be located, over his or her own signature, stating the name of the disease, and the name, color, sex, and age of the person suffering therefrom, together with the street and number or such other sufficient designation of the house, room, or other place in which said person may be located, and such other information as may be deemed necessary by said health authorities." The present rules and regulations of the State Board of Health require every physician or any person having patients under his care and observation to report weekly to the local or State health officer having jurisdiction the occurrence of any cases or suspected cases of any of the twenty-four diseases that are specifically enumerated. These regulations also require that any outbreak in influenza, septic sore throat, infectious jaundice, food poisoning, or any rare or unusual disease of importance to the public be reported. Occupational diseases and those caused by lead, phosphorus, or arsenic are not included in the reportable list.

Each week the bureau forwards special report forms to all physicians in counties both with and without organized health departments. In counties with organized health departments weekly reports are sent to the county or district health officer, who records the information in his local register and forwards the original reports to the State Department of Health. In all other counties physicians send their weekly

[1]Code, 1936, Section 1497.

reports direct to the State Department of Health. Should a physician have no cases to report he is expected to return the blank form, and all reports from all counties are expected to reach the State Department of Health by a given day each week. Reports of the occurrence of communicable diseases in the twenty-four cities of the State are forwarded weekly by the respective city health authorities to the State Department of Health.

In the office of the Bureau of Communicable Diseases morbidity reports are tabulated in specially prepared registers in which data are classified for each disease according to age, sex, color, and month, by State and county, for each year. By the use of this and three other registers, the limited personnel of this bureau has been able to maintain complete and accurate records of communicable disease occurrence in the 100 counties of the State without the extra expense and labor required in connection with punched cards. Moreover, these data are immediately available, together with estimated populations, rates, etc., for each year commencing with 1909.

Reports of communicable disease occurrence in the State as a whole are prepared and sent to the United States Public Health Service weekly, monthly, and annually.

1) The Division of Venereal Disease Control.—The earliest official efforts directed toward the active control of venereal disease in Virginia appear to have been undertaken in 1918 through a cooperative enterprise inaugurated by the United States Public Health Service, the Commission on War Training Camp Activities, and the Virginia State Board of Health. The immediate purpose of this work seems to have been the control of vice in extra-cantonment zones, intended primarily to protect soldiers, sailors, and marines during the war and demobilization periods.

Following the demobilization period, work was continued by the State Department of Health and the United States Public Health Service. In 1920 the General Assembly passed a venereal disease law which required physicians and others to report all cases of syphilis, gonorrhea, and chancroid to the State Board of Health. This law vested health officers with as much authority to exercise control over venereal diseases as they had for the control of any other communicable disease. At that time venereal disease control activities were conducted under the bureau of social hygiene. In 1922 the support of the United States Public Health Service was withdrawn, leaving the work entirely in charge of the State Department of Health. From 1922 to 1932 the work was carried on as a division of the Bureau of Rural Sanitation. In the latter year, however, the activities, which then consisted of distributing drugs to physicians and health officers at cost, were transferred to the Bureau of Epidemiology (present Bureau of Communicable Diseases). On December 1, 1936, a Division of Venereal Disease Control was created as a division of the Bureau of Communicable Diseases.

The personnel of this division consists of a director, a secretary-stenographer, and a clerk. A representative of the United States Public Health Service has been assigned for duty with the division for

an indefinite period to assist the director in the preparation and inauguration of his program.

During the coming biennium the division hopes to inaugurate in Virginia the program recommended by the advisory committee of the United States Public Health Service for venereal disease control in State and local health departments. Actual application of these measures, however, depends upon financial participation by the Federal Government, since the budget was prepared and submitted as a State-Federal cooperative project. The annual budget covering the cost of activities contemplated for the next few years has been estimated at $130,000.

Pending consideration and possible approval of funds for a more comprehensive program than has been possible thus far, the division is continuing to promote activities by local official and non-official agencies throughout the State. Close contact has been established with the medical profession and, to some extent with lay groups, and clinics have been promoted through funds raised by local political or civic groups. By the end of 1937, eighty-three such clinics were in active operation. These were conducted by:

1. Local health departments
2. Health departments and hospital staffs
3. Health departments and medical societies
4. Groups of private physicians
5. Health departments and civic organizations
6. Medical colleges
7. County public health associations

At present the division is in position to render advisory service to these clinics and to private physicians, the State Department of Health furnishes drugs free, and the staffs of county health departments are available for investigating sources of infection and contacts and returning lapsed cases for treatment. A very complete new system for reporting cases of syphilis and gonorrhea by case number, of contacts, and of cases that have lapsed from treatment was inaugurated in organized counties on January 1, 1938.

d. *The Bureau of Public Health Nursing.*—Public health nursing as a State Department of Health activity was conducted from 1916 to 1932 as a division of the bureau of child health. In January, 1932, a separate bureau, coordinate with the other bureaus of the department, was created and the present director was appointed. The personnel consists of a director, five generalized supervisors (three in the central office and one each in the Valley and Southwest districts), one supervisor of tuberculosis nursing, eight field nurses with the tuberculosis out-patient service, and two stenographers. The sixty-four nurses engaged in generalized nursing in counties with organized health services are under the direct supervision of the respective county health officers and do not constitute a part of this bureau. The services rendered by the bureau to county health departments are entirely advisory, and are undertaken only at the request of the respective county health officers.

The functions of the bureau, as summarized in the Virginia Health Bulletin of September, 1933, and subsequently modified, are as follows:

1. Promotes interest in, and assists in organizing public health nursing services throughout the State.
2. Guides the committees, where nursing services have been established, in developing their local programs which embody the principles set forth by the National Organization of Public Health Nursing as adapted to county nursing services in Virginia.
3. Seeks to maintain a high standard of professional efficiency among public health nurses of the State by:
   a. Keeping them informed as to the methods of obtaining opportunities for continual development, and stimulating them to take advantage of all such opportunities.
   b. Offering a personal service to each nurse in the solving of her individual problems.
   c. Recommending only qualified, registered nurses, for public health positions.
4. Assists public health nurses in obtaining positions, assists associations in obtaining nurses to fill vacancies, and advises graduate nurses as to methods of obtaining public health training.
5. Standardizes reports and daily record keeping, and stimulates the correct reporting of nursing activities.
6. Compiles, through surveys, material helpful to the administration of nursing work.
7. Supervises the activities of the tuberculosis nurses, plans their schedules, and maintains the State tuberculosis register.

As has been stated previously, the relation of the director of this bureau to the sixty-four nurses on the staffs of county health departments is advisory only. The same is true with respect to nurses employed by schools (of which there is a record of thirty-five), cities, towns, and counties without organized health departments. However, the latter always request advice in connection with the selection of nurses.

In addition to the six supervising nurses in the State, and the eight nurses on special tuberculosis duty, the State Department employs seven other nurses. Of these, two are associated with the bureau of maternal and child health, three with the crippled children's bureau, and two are engaged in a special demonstration project in Northumberland County. The director of the bureau exercises at least partial supervision over all of these except the two nurses attached to the bureau of maternal and child health.

In the selection of nurses for appointment to positions in the State Department of Health or on the staffs of cooperative county health departments, the director of this bureau renders valuable assistance. The present minimum qualifications for appointment to such positions are:

1. Graduation from an accredited high school
2. Graduation from an approved training school
3. Registration in Virginia
4. Possession of a certificate in public health training

Public health nursing experience is also an important consideration in making these selections, but preference is given those applicants who have had training in theory, but no experience, rather than those who have had experience but no theory. Salaries range from $1,500 to $1,800 for nurses on the staffs of cooperative county health departments, to $2,000 for supervising nurses on the staff of the bureau of public health nursing. County nurses are required to furnish their own cars and are allowed $20 per month plus upkeep, while advisory nurses are paid five cents for each mile traveled on official business.

e. *The Crippled Children's Bureau.*—Beginning in 1918, with an appropriation of $10,000, the State Legislature has continued to make annual allotments for the treatment of orthopedic cases. Soon after the original appropriation was made, the Crippled Children's Hospital Association was organized. For a number of years thereafter State appropriations were supplemented by funds raised by this association and activities, including local clinics and hospital care, were conducted under the joint auspices of the State Board of Health and the Association. The State appropriation was increased to $25,000 in 1922, and was continued at that figure until July 1, 1936, when the Crippled Children's Bureau was organized.

The personnel of the bureau consists of a director, three nurses, and one clerk. The bureau is charged with responsibility for the administration and supervision of services for the physical rehabilitation of crippled children. The work is financed from funds provided by the State and the United States Children's Bureau.

The present program includes diagnostic clinics for both white and colored children, hospitalization for those having remedial defects, a follow-up service, and active cooperation with the State Department of Education in the vocational training of these children. The State Department of Health has adopted the definition that "a crippled child is one who by reason of a congenital or acquired defect of development, disease, or injury, is deficient in the use of his body or limbs." This definition has the force of law. All crippled children are eligible for examination at the diagnostic clinics, but limitation of funds has made it essential to restrict hospitalization and the free provision of braces and other orthopedic appliances to indigent children under sixteen years of age who present definite orthopedic conditions, contraction deformities, harelip, or cleft palate. Preference is given to rural children of normal mentality who have remedial deformities.

The diagnostic service is made possible through a cooperative arrangement between the Crippled Children's Bureau and the State Orthopedic Society. The State has been divided arbitrarily into eight districts and the surgeons assigned to such districts conduct all clinics held therein. These clinics are intended for diagnostic purposes, but frequently the surgeons find it necessary to apply casts, fit braces, or give other simple treatments. Sustained efforts are being made to place these clinics on a permanent and regular schedule. Surgeons are granted a travel allowance of $15 for each clinic conducted. Otherwise their services are entirely free. To insure prompt and complete

records of each clinic, the surgeons are permitted to utilize their private secretaries, to whom the bureau pays $5 per clinic. During the year ending June 30, 1937, a total of 136 clinics were held, with 2,667 visits.

Facilities for hospitalization have been provided at two State owned institutions, namely, the University of Virginia Hospital, at Charlottesville, and the Hospital Division of the Medical College of Virginia, Richmond. Each of these hospitals is paid $3 per day for each crippled child hospitalized with the approval of the State Department of Health. Recently arrangements were made on a contract basis with the Jefferson Hospital at Roanoke to accommodate a limited number of children.

Notification of the discharge of patients from hospitals, with recommendations for aftercare, are sent promptly to the Crippled Children's Bureau. These, in turn, are forwarded to local health officers who provide the necessary follow-up services. In counties devoid of organized health facilities, the duty of conducting such follow-up service devolves upon the three special orthopedic nurses on the staff of the central bureau. Copies of discharge records also are sent to the family physicians of discharged patients in order that continuity of treatment may be maintained. As a special project, efforts are being made to have an orthopedic surgeon see every case of infantile paralysis reported to the department.

f. *The Bureau of Industrial Hygiene.*—This bureau was created on July 1, 1936, for the purpose of assisting industry in the prevention and control of occupational diseases. The cost of the work is being financed from joint State and Federal appropriations. The personnel of the bureau consists of a medical director, an engineer, a chemist, and a secretary.

The principal activities of the bureau thus far have been devoted to a preliminary state-wide survey which involved recording the number of persons who by occupation are exposed to various materials which may be a hazard to health. The accumulated information also includes certain data on the welfare facilities afforded these workers in the industrial environment.

The 1930 census of the United States records 880,276 gainfully employed workers in Virginia. Experience has shown, however, that persons engaged in such occupations as agriculture, forestry and fishing, building, postal service, etc., are, as a rule, not exposed to specific occupational disease hazards. So, for the purpose of this survey, 658,017 persons engaged in such occupations were excluded. The remaining 222,259 workers were classified into seventeen industrial or service groups, and a representative sample (87,640) was selected for survey. This sample represented 39.4 per cent of the 222,259 persons engaged in potentially dangerous occupations, or 10.0 per cent of the 880,276 gainfully employed persons enumerated in the 1930 census. The workers surveyed were engaged in 746 industrial plants located throughout the State, and, of these, 571 plants, with 71,793 employees (81.9 per cent of the total surveyed, or 35.2 per cent of the workers in this group) were in the manufacturing and mechanical groups. The study elicited

the fact that for the 87,640 workers surveyed, there were 129,178 exposures to one or more of the materials considered. The total of these estimates indicates that there are 358,095 exposures among the 222,259 workers in the types of industries included in the survey, or an average of 1.61 exposures per worker.

The survey showed that 60.6 per cent of the plants employed less than 51 workers, and 73.9 per cent employed less than 101 workers, while only 11.5 per cent of the employees were engaged in plants employing over 2,500 workers. The percentage of plants with more than 2,500 workers was only 0.3. The largest percentage (23.4) of workers was employed in plants having 250 to 500 workers, and 60.2 per cent of the working population surveyed were employed in plants with 500 workers or less. The latter fact is of importance since the National Industrial Conference Board has shown that establishments employing more than 500 workers can carry on a more economical medical service than the so-called smaller plants and that such services have been existent only in these larger plants. Subsequent to the completion of this survey the bureau staff has engaged in certain detailed studies with a view to determining the degree of danger that these potential hazards actually represent. As yet, the bureau is not fully equipped with laboratory and other facilities to expedite these studies, but such developments are under consideration. The plan, thus far, has been to provide a separate laboratory for the bureau, rather than equip the department laboratories to undertake this additional work.

g. *The Bureau of Sanitary Engineering.*—This bureau was created in 1910 and has been continuously under the supervision of the present director. For many years the principal duties of the bureau involved general supervision over public water supplies, sewerage, sewage treatment, and swimming pools. In May, 1933, the bureau became responsible to the State Health Commissioner for all supervisory work required for the certification of shellfish and crabmeat shipped to other States for sale as food, and in December, 1933, for all drainage projects authorized by government relief agencies for the control of both malaria-transmitting and pest mosquitoes.

In addition to the director, the personnel of the bureau on January 1, 1938, numbered ninety-two employees. Of these, twelve were on the State payroll, four were being paid by the United States Public Health Service, and seventy-six by the Public Works Administration. The accompanying chart shows the duties to which the several employees are assigned.

Activities along the four lines of work—engineering, shellfish sanitation, control of malarial mosquitoes, and control of pest mosquitoes—necessitate the use of three branch offices in addition to the headquarters office at Richmond. Engineering activities involving public water supplies, sewerage, and other related technical matters are usually dealt with by the central office staff. The other three projects however, are confined for the most part to the eastern seaboard, and, for purposes of efficiency and economy, branch offices and laboratories for their promotion have been established locally, where they are readily

BUREAU OF SANITARY ENGINEERING, VIRGINIA DEPARTMENT OF HEALTH

Chart Showing Activities and Personnel (As of January 1, 1938)

Shellfish Sanitation	Water, Sewage, Miscellaneous	Malaria Control	Pest Mosquito Control
1 Assistant Engineer* 1 Senior Bacteriologist* 1 Assistant Bacteriologist* 1 Chief Clerk Inspector* 1 Inspector (Part time)* 1 Assistant Bacteriologist 4 Stenographers 1 Assistant Inspector 3 Clerks 2 Boat Operators 1 Draftsman 3 Laborers *Temporary at Experimental Plant* 1 Foreman 1 Carpenter 2 Plumber Helpers	1 Senior Assistant Engineer* 3 Assistant Engineers* 1 Assistant Engineer* (Part time on shellfish sanitation) 1 Secretary-Stenographer* 1 Stenographer-Clerk* 2 Stenographers	1 Assistant State Director† 1 Office Engineer† 1 Office Manager 1 Clerk 1 Draftsman 1 District Supervisor† 1 Local Supervisor 10 Foremen 1 District Supervisor† 1 Superintendent 1 Engineer 2 Foremen 1 Local Supervisor 8 Foreman	1 Assistant Director 1 Senior Clerk 2 Superintendents 2 Senior Foreman 17 Foremen 5 Labor Foremen
Monthly Payroll, $2,154.40	Monthly Payroll, $1,362.80	Monthly Payroll, $2,550.66	Monthly Payroll, $2,073.20
	Total Monthly Payroll, Including Director, $8,377.10.		

*On State Payroll.
†Paid by Public Health Service.
Remaining Personnel Paid by W. P. A.

accessible. Two of these branch offices are located at Norfolk—one for shellfish sanitation and the associated laboratory work, and one for malaria control projects at the Marine Hospital. The third branch office, for shellfish sanitation and malaria control, is located at Parksley, in Accomac County.

1) Engineering.—The State Board of Health is authorized[1] to assume general supervision and control over all water supplies and water works in the State in so far as the sanitary and physical quality of waters furnished may affect the public health and comfort. The term *water works* is defined as any plant or system for the collection, purification, or distribution of water for drinking or domestic use to the public or to more than twenty-five individuals; provided, however, that nothing in the Act shall be held to apply to any water above the intake of such water works. This provision was inserted in order to make it clear that provisions of this particular law were confined to the *water works* as defined and should not apply in any way to the pollution of streams from which supplies are taken. However, any city or town which obtains its water for drinking and domestic use from a catchment area not exceeding fifty square miles above the intake is amply protected against pollution by a law enacted in 1891. Pollution by bathing, casting out of dead animals, discharge of sewage, trade wastes, or any human or animal wastes, noxious or putrescible substance whether solid or fluid, and whether same be buried or not, within 200 feet of any such stream or tributary thereof is deemed a misdemeanor punishable by a fine not exceeding $100 or imprisonment not exceeding thirty days, or both, for each offense.

In addition to the usual provisions that the State Board of Health may confer with and advise cities, towns, and persons, having or intending to have a waterworks, the Act of 1916 requires that an application for a permit, accompanied by plans and specifications, shall be filed to construct new water works or for the extension of existing water works, excepting extensions to the systems of pipes for distributing the water within the community. Upon approval of the plans and specifications a written permit is issued, revocable later if deemed necessary by the board. Furthermore, the board has authority to issue an order requiring such changes in the source of supply, or alterations in the water works, as are deemed necessary in the interests of the public. With such orders, the board designates a time and place for a hearing, after which a final order is made. Provision is made for an appeal and a modified order by the Court. Failure to comply with the provisions of the Act is punishable by a fine of $20 to $100 for each offense. A municipal corporation is proceeded against by mandamus or other appropriate remedy by any court of competent jurisdiction.

No legislation has been enacted giving the State Board of Health authority over installations for the treatment of sewage and industrial wastes nor over the methods of their disposal. With few exceptions, however, the sewage treatment plants installed by cities, towns, institutions, and the larger unincorporated communities have been

[1]Chapter 360, Acts of 1916.

approved by request prior to construction. This is true also for the majority of new systems of sanitary sewers. In connection with the construction of sewerage systems and sewage treatment plants under Works Progress Administration auspices, the government requires that all plans and specifications, except for such construction in the proposed Hampton Roads Sanitary District, shall be submitted to the bureau for examination and approval before funds are made available.

The State Board of Health has not been vested with any authority regarding the pollution of streams, nor have any appropriations been made specifically for study of stream conditions. In the case of nuisances in the vicinity of sewer outfalls believed to be harmful to health, it is possible that the board has authority to take action under the Act by which the board was created.

The board is authorized by law to adopt such rules and regulations as it may deem necessary regarding plumbing, the disposal of garbage, and the sanitation of swimming pools.

The Bureau of Sanitary Engineering does not undertake the preparation of plans and specifications of water works, nor the construction of such plants. Its most important function is the constant supervision which it exercises over all public water supplies. Beginning with a careful study of the plans and specifications of all prospective new plants prior to issuing permits for their construction, continuous supervision is maintained over all plants and their operators. With a view to promoting close cooperation in matters relating to the operation of plants, the bureau has fostered a spirit of friendliness and goodwill with plant operators throughout the State. Practical evidence of the effectiveness of cooperative efforts between the bureau staff and the plant operators is reflected in the fact that during the past twelve years no cases of typhoid fever have been ascribed to the pollution of public water supplies. Since many supplies are subject to contamination prior to treatment, this result could hardly have been achieved except by the exercise of constant and effective operating methods.

Special efforts have been made to locate cross connections between water distributing pipes with privately owned or emergency supplies. It is believed that the bureau now has a record of practically all such connections, with a detailed description of the conditions under which their use is being permitted, and inspections of these are made from time to time.

As of January 1, 1938, there were listed 407 public water supplies in Virginia, serving approximately 1,047,248 persons. This list does not include an appreciable number of supplies for public schools, but it does include 141 places, each with estimated populations of less than 250, representing an aggregate of 18,110 persons. Since it is frequently impractical for communities with populations of less than 250 to provide public water supplies, the bureau's records of communities without such supplies refer only to places with more than 250 inhabitants. There are 121 such places in the State with an aggregate population of about 50,000. Of these communities, 3 have populations of more than 1,000; 29 have populations of more than 500; and 89 have populations of less than 500. These figures show that of a total population of

1,047,205 for which it would be practical theoretically to provide public water supplies, 1,047,248 or 95.5 per cent, actually have such supplies, and 49,957, or 4.5 per cent, are without this service. Thus, 43.2 per cent of the State's 2,421,851 inhabitants (1930 census) are now provided with safe public water supplies.

Of the 407 public water supplies in the State, 218 systems supply water untreated to the consumers; 90 systems employ chlorination alone, and 99 employ a combination of filtration and chlorination. Of the filtration plants, twelve have laboratory facilities for daily chemical and bacteriological examinations, and samples from two others are examined bacteriologically in a local laboratory. Samples from two other supplies are examined several times weekly in one of the department's branch laboratories. Samples from the other supplies are examined weekly, fortnightly, quarterly, or semi-annually in the State laboratories, in accordance with a schedule prepared by this bureau.

Of the 1,047,248, estimated as being supplied from public sources, 71.6 per cent are furnished with water purified by filtration supplemented by chlorination; 18.7 per cent with water treated with chlorine alone, and 9.7 per cent with water regarded as safe without treatment. Municipalities having supplies that meet certain requirements established by the bureau are entitled to post the sign *Public Water Approved* on the main highways at the corporate limits. Such signs are now being displayed by ninety-one municipalities. Plant operators in Virginia are not subject to license, nor are they required to meet any special qualification standards. Many of them, however, have become fairly proficient through practical experience and knowledge acquired by association with engineers from this bureau. As a means of further contributing to their knowledge and efficiency as plant operators, the bureau in cooperation with the League of Virginia Municipalities, the Virginia Section of the American Waterworks Association, and the State Division of Trade and Industrial Education, started a series of two-day schools for water works superintendents and operators in 1935. For 1938 this course has been revised in order to provide more intensive training.

In addition to the short schools, home study courses are being started which when completed will entitle those taking the course to a certificate of competence from the sponsoring agencies. Instruction is being offered in four grades, and two more probably will be added later. The first school under the new set-up was held at the Virginia Polytechnic Institute, Blacksburg, on December 2 and 3, 1937, for all water works personnel in the western part of the State. At this school the home study idea was introduced and sixteen men enrolled for these courses which are now getting under way. Schools for operators in the northern and central parts of the State will be held at the Virginia Military Institute at Lexington, and for those in Eastern Virginia, at Richmond.

As previously stated, the State Board of Health has no legal authority over sewage treatment plants nor over the methods of sewage disposal. However, the many voluntary requests received from local authorities, and the requirement that all Works Progress Administra-

tion projects be approved, entail a large amount of supervisory and advisory work on the part of the staff of the Bureau of Sanitary Engineering. During the period of 1934 to 1938 the bureau has examined and approved plans and specifications for public water supplies and sewerage improvements, already built or now under construction, costing in the aggregate $11,012,300. These include ten new water filtration and eighteen sewage treatment plants, the operation of which requires general supervision by members of the staff. The number of sewage treatment plants increased from fifty-two in July, 1934, to eighty-nine in January, 1938. The population served by such plants increased from 74,185 to 145,047.

No special laws have been enacted for the control of stream pollution. Laws are in effect, however, prohibiting pollution of certain waters approved for shellfish growing areas. The pollution of streams in Tidewater Virginia has provoked a great deal of discussion because of its effect on shellfish areas and certain popular bathing beaches. In this connection the Hampton Roads Sewage Disposal Commission has recommended the creation of a sanitary district to include the cities and counties bordering Hampton Roads. The estimated cost of providing sewage collection and treatment facilities for the district is $8,000,000.

2) *Shellfish Sanitation.*—The first law for State supervision of shellfish growing areas and marketing of oysters was enacted in 1916. Responsibility for administering the provisions of the law was vested in the Dairy and Food Division of the Department of Agriculture until 1927, when an amendment to the law transferred the responsibility to the State Health Commissioner. The law was further amended in 1930 to include crabmeat, scallops, and clams. In the State Department of Health, shellfish sanitation was carried on under a separate bureau until May 1, 1933, when the work was delegated to the Bureau of Sanitary Engineering.

From July 1, 1928, to July 1, 1934, the annual appropriation for shellfish sanitation was $25,000 per annum, obtained from a special tax on oysters. This allotment was reduced to $15,000 a year for the next two years and then to $7,400. All funds now needed over and above $7,500 are derived from the appropriation of the State Health Department.

The State Health Commissioner through his authorized representatives has authority to conduct surveys of shellfish producing areas, to formulate sanitary regulations, to set sanitary standards and make such examinations, analyses and inspections as are necessary in the enforcement of these regulations and standards. Authority is given to enter any premises on which shellfish are being stored, handled, or prepared and, where there is evidence of violation of the related laws or regulations, to take such steps as are necessary to prevent further preparation or marketing of any product found to be illegally handled or prepared.

In Virginia there is an annual production of shellfish of an estimated value of $2,000,000 consisting roughly of two million bushels of oysters

and 1,500,000 pounds of clams. Approximately fifteen thousand persons are engaged in the industry, taking oysters from 290,000 acres of shellfish grounds and working in nearly four hundred plants, shucking and packing shellfish. This activity is general over Tidewater Virginia, and the larger part of the water area in this section is either producing or potential shellfish producing area.

While the activities of the bureau in this connection are of very great importance to the health of the people of Virginia and of those in other States to which they are shipped, as well as to the local industry itself, space does not permit a detailed discussion of them here. Briefly stated, control is exercised over the shellfish industry from the growing areas, through the shucking and packing plants, to the point where the product is ready for shipment to the consumer. In broad outline this program includes inspection of growing areas from which samples of oysters and clams and of the overlying waters are collected for bacteriological examinations; surveys of the shore lines along the growing areas to detect and eliminate possible sources of pollution; the delineation of restricted areas, prohibition of harvesting shellfish from these areas for direct marketing; supervision of the removal and relaying of shellfish from polluted areas to approved areas of clean water, under authority of official permits, for cleansing purposes, prohibition of removal from cleansing areas until cleansing is complete, and examination of sufficient samples of these stocks to insure that the product is ready for market; supervision of shucking and packing plants and of their operation, and of practices related to holding and storage of shellfish prior to shucking; and certification that shippers have complied with the minimum requirements of the United States Public Health Service.

3) *Mosquito Control.*—The State Department of Health has authority under the law creating the State Board of Health and several amendments thereto, to conduct surveys, make investigations, consult with and advise cities, towns or persons regarding malaria and methods of its control And the board may adopt such rules and regulations as it deems necessary for the protection of the public health. No special laws have been enacted for the control of malaria unless an Act entitled *An Act to Authorize Certain Cities and/or Counties in This State to Establish a Mosquito Control District* be considered as such. This law, passed in 1930, appears to have been intended for the control of pest mosquitoes. In 1929, the State Board of Health adopted a rather comprehensive set of rules and regulations governing precautions to be taken in connection with the impounding of waters.

Soon after the Federal Civil Works Administration was organized the Federal Government allotted certain funds to the United States Public Health Service to be used for drainage projects to control malaria. Under this arrangement the Public Health Service was the sponsor of projects in each State and in Virginia the State Department of Health was agent. From the beginning of the work on December 1, 1933, to July 1, 1935, drainage operations for the control of malaria

mosquitoes were conducted along with those for the control of pest mosquitoes. Subsequent to the latter date, however, a change in policy divorced pest mosquito control from malaria control. All of these activities have been under the immediate supervision of the Bureau of Sanitary Engineering from the start, but, whereas the Public Health Service sponsored both malaria control and pest mosquito control in the early part of the work, sponsorship of the latter activity was handed over to the State Department of Health in 1935. At the present time the salaries and traveling expenses of the supervising personnel of the malaria control staff are paid by the United States Public Health Service. All other personnel engaged on malaria drainage projects, and all personnel on pest mosquito control projects are paid from Works Progress Administration funds. During the past four years approximately 1,785 miles of ditches have been dug at a cost to the sponsoring agencies of $616,133.

h. *The Bureau of Vital Statistics.*—The collection and preservation of records of marriages, births and deaths were accepted officially as functions of the State Government for the first time in 1853. In that year the General Assembly enacted a law[1] requiring the clerk of every county and corporation court to maintain three books, to be called, respectively, the register of marriages, the register of births, and the register of deaths. Information regarding births and deaths was to be collected by the commissioners of revenue and transmitted to clerks of the court. At a designated date during the ensuing year, the clerk of the court was required to furnish the auditor of public accounts with a copy of each of his three registers, and it was the duty of the auditor to tabulate all records for the State and to preserve the registers. Such records were collected from 1853 to 1896, when the law was repealed, or, for some reason which is not now apparent, its operation was discontinued. Thereafter for about sixteen years this important work was entirely suspended, and it was not until 1912 that an effective vital statistics law was passed and adequate central and local machinery was established for the proper registration of births and deaths. This law, with subsequent amendments, is a modification of the model law recommended by the United States Census Bureau and is the law under which the bureau now conducts its activities.

The duties imposed upon the State Registrar of Vital Statistics are performed by the Bureau of Vital Statistics, of which the State Registrar is director. These duties include enforcing the State registration law; recording and making studies of all births and deaths that occur in the State; collecting and preserving records of all marriages and divorces that take place in the State; enforcement of the Act of 1924 to preserve racial integrity; the issuance of permits to, and supervision of, midwives; and distribution of ampules of 1 per cent silver nitrate solution to doctors, hospitals, and midwives to be instilled in the eyes of newborn infants. Certificates of birth registration are sent to the parents of all children born in Virginia, and certified copies of birth and death certificates are supplied to those requiring them upon the payment of a

[1]Acts of 1853, Chapter 25.

fee of fifty cents. Such certified copies are supplied to veterans and members of their families, and to certain other persons free of charge.

The personnel of the bureau consists of a director, an assistant director, one statistical assistant, sixteen clerks, and two secretary-stenographers—a total of twenty-one persons.

The originals of all birth and death certificates issued in Virginia since June, 1912, are on file in the office of the State Registrar of Vital Statistics, and a cross index of all such certificates is being maintained. A punch card system for recording data relating to births and deaths, and an electric machine for sorting the cards, have been in use since 1922.

The State Board of Health is required by law[1] to have charge of the registration of births and deaths; to prepare the necessary instructions, forms, and blanks for obtaining and preserving such records; to insure the faithful registration of the same in each registration district and in the Bureau of Vital Statistics in the capital of the State; to enforce the law uniformly and thoroughly throughout the State; and to promulgate from time to time any additional forms and amendments that may be necessary for this purpose. "For the purpose of this Chapter[2], the State shall be divided into registration districts as follows: each city, town, and magisterial district shall constitute a registration district, provided that the Registrar may combine two or more registration districts into one registration district."

In cities the principal executive officer of the local board of health is the local registrar of vital statistics, while in towns and magisterial districts the local registrars are appointed by the State Registrar. The tenure of office of a local registrar is not stated in the law. Presumably continuation of office is dependent upon efficiency of service and good behavior as determined by the State Registrar. At the present time there are 1,250 local registrars. Local registrars receive the sum of twenty-five cents for each birth or death certificate properly made out and registered with him, correctly recorded, and promptly returned by him to the State Registrar, as required by law. In case no births or deaths are registered during the month, the local registrar is paid a fee of twenty-five cents for informing the State Registrar of that fact. The salary paid the principal executive officer of a local board of health may be in lieu of such fees as are designated by this law. Each registrar is required to make a complete and accurate copy of each birth and each death certificate registered by him, in a record book furnished by the State Registrar. Such record books are to be preserved as permanent records which must be transferred to succeeding registrars. On the tenth day of each month each local registrar is required to transmit to the State Registrar all original certificates of births and deaths which have occurred to the end of the preceding month. If no births or deaths occurred during any month the local registrar must report that fact to the State Registrar on the tenth day of the following month.

The State Registrar annually certifies to the county treasurer the number of births and deaths properly registered and the amounts due each registrar, and such amounts are paid to the respective registrars out of the county treasuries.

[1]Virginia Code, 1919, Section 1561.
[2]Virginia Code, 1919, Section 1563.

Undertakers, or persons acting as undertakers, are responsible for obtaining and filing certificates of death with local registrars, and for securing burial or removal permits prior to any disposition of a dead body. It is their duty to obtain the personal and statistical information and then present the certificate to the attendant physician, if any, or to the health officer or coroner, as directed by the local registrar, for the medical certificate of the cause of death. The certificate is then completed by adding the required facts, relative to the date and place of burial, over his signature and with his address. The completed certificate is then filed with the local registrar, who issues a burial permit in exchange. Since a body may not be held pending burial or other disposition more than seventy-two hours after death, certificates must be filed and burial permits obtained within that time. If death occurred in a remote or sparsely settled district however, or when it is impractical to file a death certificate and obtain a burial permit, a body may be buried or removed from the district without a permit, but a certificate of death must be filed within ten days. Deaths due to violence or occurring under suspicious circumstances are referred to a coroner for his investigation and certification. For the purpose of reporting deaths the standard certificate and the international list of causes of death are employed.

Birth certificates are required to be filed with local registrars by the attending physician or midwife within ten days after the date of the birth. If there is no attending physician or midwife, it then becomes the duty of the father or mother of the child, the householder, manager, or superintendent of a public or private institution in which the birth occurred to notify the local registrar within ten days. It is then the duty of the local registrar to secure the necessary information and signature to make a proper certificate of birth. Stillbirths are reported as births and deaths and the registrar is paid a fee of twenty-five cents for each certificate. Certificates of births and deaths that occur in cities are sent direct to the respective city health departments and thence to the State Registrar, in whose office they are preserved permanently.

Transcripts of all birth, death, and stillbirth certificates are made for the United States Bureau of the Census each month, and tabulations of certain vital statistics for the State are sent to the United States Public Health Service monthly and annually. Since 1935 the State Department of Health has received from the United States Bureau of the Census transcripts of certificates of births to, and deaths of, Virginia residents that occurred outside of the State. These are sorted by States, bound and stored in the bureau vaults. Since 1935 tabulations of births and deaths have been issued in the annual reports of the department both on the *recorded* and *corrected* basis. The additional labor thus entailed enormously increased the routine duties of the bureau staff.

Recently arrangements have been made whereby original birth and death certificates issued in certain counties are routed by local registrars through the respective county health officers to the State Registrars. This procedure permits the health officers to review the certificates, to effect the correction of certain errors and omissions, and to prepare such records for use in their offices as may be desirable.

The handling and tabulation of routine statistical data for 1936 involved the following units:

Classification	*Number*
Birth certificates	51,117
Death certificates	32,169
Stillbirth birth certificates	2,248
Stillbirth death certificates	2,248
Reports of marriages	30,118
Reports of divorces	4,178

During 1936 a total of 5,528 searches were made, and certified copies issued, of birth and death certificates; 1,282 of marriage and divorce certificates; and 376 searches in connection with records relative to Racial Integrity data; a total of 7,186 searches. The cash income accrued from this work amounted to $2,802.50.

i. *The Bureau of Maternal and Child Health.*—The personnel of this bureau consists of a director, an assistant director, an obstetrician, a pediatrician, two instructional nurses, a secretary-stenographer, a stenographer-clerk, and a clerk—a total of nine. The Division of Mouth Hygiene, discussed below, is a section of this bureau.

The program of the bureau is largely of an educational character, the objectives of which are the promotion of maternal, infant, and child hygiene. Service to individual patients is rendered by the staff principally through the promotion of prenatal, infant, and preschool clinics and some home visiting by nurses on behalf of these groups through the cooperation of county and city health officers.

Educational Activities.—The educational program is a diversified one, planned to impart practical knowledge and assistance to all elements of the population that may be of service in the promotion of the hygiene of maternity and child life. The staff seeks to promote service to mothers and children through combined educational and service activities. Their aims are to mobilize the assets of each community and to utilize societies, clubs, or other State and local groups for the performance of those services for which they are best equipped. Insofar as possible definite programs are assigned to such State-wide organizations as Parent-Teacher Associations, Federation of Women's Clubs, and others, but in counties that have no local counterparts of such State organizations, programs are undertaken in cooperation with whatever local organizations may be found. Briefly stated, the major features of the bureau's educational program, which is entirely a cooperative one, include: postgraduate instruction in obstetrics and pediatrics to physicians; group instruction of midwives; instruction of lay groups and supervision of the health programs undertaken by them; cooperation with the State Department of Education in carrying out the provisions of the so-called West Law, and the distribution of appropriate literature to individuals and groups throughout the State.

Postgraduate Instruction.—This work is undertaken in cooperation with the Medical Society of Virginia, the University of Virginia Medical School, and the Medical College of Virginia. The obstetrician and pediatrician conduct a series of classes, consisting of brief lectures followed by discussion, for the benefit of physicians in numerous localities of the State. Courses are conducted over a period of five weeks, during which three or more weekly meetings are held at each center. In the intervals between meetings the clinicians endeavor to contact individual practitioners with a view to ascertaining the type of instruction that would best meet local needs. Each clinician also places himself freely at the disposal of these local physicians for consultation purposes. Although this work has been in progress only since the latter part of 1936, the interest manifested by physicians who have availed themselves of the opportunities offered indicates that the service promises to do much for the improvement of the practice of obstetrics and pediatrics.

Instruction of Midwives.—Under the laws of the State, midwives are required to register their names with the State Registrar of vital statistics and to secure a permit from the Registrar before engaging in the practice of midwifery for pay. No special qualifications are required to enable midwives to secure these permits, nor are there any definite provisions for systematic supervision of activities undertaken by them. Apart from certain printed instructions for the guidance of midwives, which are not required by law, it would appear that the only supervision exercised by the State Registrar relates to the reporting of births and the prevention of ophthalmia neonatorum.

For some years the Bureau of Maternal and Child Health has been attempting to place the services rendered by the State's approximately 3,875 midwives on a higher level of efficiency. Classes for midwives are being held in many of the counties with full-time health services by local nurses. In counties that do not have organized health departments, classes for midwives and their patients are conducted by one of the bureau's field nurses. The primary purposes of the classes are: to teach the midwives the rudiments of midwifery; to organize the classes for the study of natal care and child health; to plan some definite health work to be done under the supervision of the county school supervisors and the local Negro Organization Society; and to teach the mothers what to expect of the midwives.

The local colored supervisors of schools arrange for the classes, and the groups are organized into health committees of the Negro Organization Society. The health committees then continue to meet at regular intervals for group study and community health work under the direction of the supervisors of schools. Among the popular projects undertaken by these clubs are diphtheria immunization, screening of houses, making layettes, and the preparation of food to be used for hot lunches in the winter, for both home and school consumption. The field nurse endeavors to visit each group at least once a year, to give demonstrations and to suggest new lines of health work.

Instruction of Lay Groups.—This work is undertaken throughout the State, but the staff of the bureau directs its major attention to counties that have no organized health departments. In general, these activities are sponsored and supervised by the staff of this bureau, but the actual work is undertaken by the local branches of such state-wide organizations as the State Federation of Parents and Teachers Association, State Federation of Women's Clubs, Homemakers Clubs of Virginia, Four-H Clubs, Adult Education Groups, Home Economics classes, and others. Each of these groups is given a definite program annually, or as often as necessary, which it undertakes to carry out under the supervision and with the assistance of the Bureau of Maternal and Child Health. While the details of these programs are too extensive for discussion here, it may be added that they are of a very practical nature and that all have as their objectives the promotion of the health and well-being of maternal and child life. Moreover, the methods employed in teaching health essentials through these groups include the performance of many practical health services, thus accomplishing the very desirable result of teaching by actual experience. Work with lay groups, such as certain church organizations, that have no State-wide affiliations is promoted by one of the educational nurses. In the recent past this nurse has devoted most of her attention to work with the Cradle Roll Superintendents of the churches. Through these local workers the nurse has been able to disseminate widely a great deal of practical knowledge to mothers about themselves and their children.

School Health Work—Health education and health service in the public schools of Virginia are joint responsibilities of the State departments of education and health. Legislation providing for these intimately related services is to be found in Chapter 327 of the Acts of the General Assembly of 1920. This Act, commonly known as the West Law, reads in part as follows:

> "In order that the teachers of the Commonwealth shall be prepared for health examinations and physical education of school children, every teacher training institution in the State is hereby required to give a course, to be approved by the Superintendent of Public Instruction and the State Health Commissioner, in health examinations and physical education, including preventive medicine, physical inspection, health instruction and physical training, upon which course every person graduating from such an institution must have passed a satisfactory examination."

In the preparation of courses of health instruction for use in the teacher training institutions of Virginia the State departments of education and health work in close cooperation. Likewise, intimate working relations exist between the two departments in regard to the health material and procedure to be employed throughout the public school system—for both white and colored pupils. Although other bureaus of the State Department of Health are available for consultation with the Department of Education, it appears that the responsibilities of the State Department of Health have been discharged in the past

principally by the Bureau of Maternal and Child Health. At any rate, a well coordinated program of health education representing the group judgment of the several bureaus of the State Department of Health, and fully utilizing the facilities of the department's Division of Health Education, has not been presented for the consideration of the State Department of Education.

In addition to the above mentioned services of the Bureau of Maternal and Child Health in the field of health education, the staff sponsors numerous practical schemes for health promotion and disease prevention among school children. Accomplishments resulting from the execution of these projects, which are carried out largely by the pupils themselves, have been found to exert a potent and lasting influence upon the lives of the pupils.

Prenatal, Infant, and Preschool Clinics.—Early in 1936 social security funds became available for the inauguration of a maternal and child health program in Virginia. By July of that year the State Department of Health had been able to secure the approval of several local medical societies to organize and establish prenatal clinics in their respective counties. It was not until October, 1936, however, that the department's plans were approved by the State Medical Society and the Bureau of Maternal and Child Health was in position to direct its efforts seriously to the inauguration of its plan.

Although the plan as submitted and approved provides for prenatal, infant, and preschool clinics, the sponsors feel that prenatal care is fundamental in any maternal and child health undertaking, and efforts are being made to place initial emphasis upon that feature of the program. Prenatal clinics, either alone or in combination with clinics for infants and young children, are conducted in cities, and in counties with organized health departments. The work is not undertaken in counties without full-time health service because of the absence of responsible personnel to take care of administrative details and to carry out the necessary follow-up work. These clinics, which are conducted under the supervision of the assistant director, are organized only with the approval of the local medical societies, which appoint the clinicians. In view of the fact that the clinics are intended only for those who are unable to pay for such services the clinicians are granted honoraria rather than a regular medical fee. The establishment and maintenance of clinics, including honoraria for clinicians, are made possible by contributions from the United States Children's Bureau. Patients are admitted to these clinics only by appointment, and they are referred directly by physicians or approved social agencies, or by midwives. Clinics have been organized as rapidly as has been deemed expedient, and at the end of the fiscal year, 1937, a total of forty-six prenatal, or combination prenatal and well-baby clinics, were in operation in counties with full-time health departments. In addition, eight cities were receiving funds to strengthen and extend similar clinics.

Each of these clinics has been supplied with adequate equipment for the performance of a high standard of work. Proper records are kept on all patients, and Wassermann tests are made as a routine on

every prenatal case. Antisyphilitic drugs are supplied for all indigent mothers and children needing such treatment.

The efficiency of this work has been materially strengthened by assistance rendered by the Bureau of Public Health Nursing. The director of the latter bureau has held regional meetings for nurses on the staffs of county health departments and has figured prominently in group instruction of pregnant women. By these activities local nurses have been taught to give group instruction at prenatal clinics, thus obviating the necessity of making a burdensome number of home visits to these patients. Furthermore, the director of the Bureau of Public Health Nursing has done much to promote midwife institutes and to increase their practical value.

1) The Division of Mouth Hygiene.—Following the passage of the West Law in 1920, teachers in the public schools of the State reported such a high percentage of dental defects among the pupils that the Virginia State Dental Association was asked to make recommendations as to what steps should be taken for the alleviation of these conditions. A survey was undertaken by a representative of the association who reported that in his opinion some form of corrective clinic was necessary, and that such clinics should be held under the direction of the State Department of Health. As a result, the Division of Mouth Hygiene was created in April, 1921.

The present personnel of this division consists of a director, a secretary, and twenty dentists, of which seventeen are white and three colored.

The objectives of the division are: to educate teachers, parents, and children in the importance of good teeth; and to furnish a means of correcting dental defects in rural areas where dental services are not readily available. The clinics are conducted on a cooperative basis, the State, the county, and the pupils participating. The plan provides that a county shall make application to the State Department of Health for a clinic, agreeing to pay half of any portion of the cost not covered by receipts from pupils, on the understanding that the State will pay an equivalent sum, but not in excess of $500 in any one year. Each pupil who is financially able contributes to the cost at the rate of fifty cents for a cleaning, a filling, or an extraction. The county's share of the cost may be paid by the Board of Supervisors, by the School Board, or by each school in which clinics are conducted. There is an average deficit to be shared by State and county of about $100 per clinic per month.

In 1924 Virginia adopted what is known as the Five Point Program. This plan provides that every child who has no evidence of defective hearing, vision, throat defects, is not more than 10 per cent under or 20 per cent over normal weight, and has no dental defects, receive a Five Point Certificate signed by the Superintendent of Public Instruction and the State Health Commissioner. This plan has been responsible for the correction of many thousands of dental, as well as other, defects.

Teacher training in oral hygiene is effected through lectures given by the director of the Division of Mouth Hygiene at State teachers colleges in connection with the provisions of the West Law. Education

of laymen is accomplished by lectures to parent-teacher organizations, civic clubs, and other groups, and through the distribution of literature.

A brief summary of the cost of the work done during the year 1937, the clinics held, and the children examined and treated follows:

Counties holding clinics	30
White clinics held	29
Colored clinics held	6
Children examined	61,336
Children treated	15,562
Total number of operations	51,535
Total cost of clinics	$ 44,333
Amount contributed by pupils	$ 21,667

j. *The Bureau of Laboratories.*—Public health laboratories maintained by the State Department of Health consist of the Central Laboratory at Richmond, three branch diagnostic laboratories at Abingdon, Norton, and Luray, respectively, and a laboratory at Norfolk for the bacteriological examination of shell-fish, crabmeat, and samples of sea water collected from areas where seafoods are harvested or stored.

The Central Laboratory is financed jointly by the State and the City of Richmond and, as such, offers free diagnostic service to health officers and physicians of the State in the vicinity of Richmond as well as to those actually living in the city. This laboratory is under the immediate charge of an acting director who is assisted by five bacteriologists, one serologist, two assistant serologists, one chemist, one technician, five clerks, and two laboratory helpers—a total of eighteen. The acting director of the central bureau has no authority over the three branch diagnostic laboratories, nor over the shellfish laboratory at Norfolk. Administration of the former is a joint responsibility of the Bureau of Rural Health and of the health officers of the respective districts, while that of the latter is a responsibility of the Bureau of Sanitary Engineering. The State Department of Health exercises no supervision over any private laboratories.

The types of work undertaken by the bureau for the State and for the City of Richmond differ somewhat. Bacteriological and serological examinations for the diagnosis of diseases of public health importance are undertaken for both State and city, whereas examinations of foods, including principally milk and seafoods, are undertaken regularly for the city but seldom for the State. On behalf of the State, examinations to determine the sanitary quality of public water supplies are conducted principally in this laboratory while those for the city are made at the water works laboratory. Safeguarding the sanitary quality of public milk supplies and other foods is a legal responsibility of the State Department of Agriculture except where communities have adopted local ordinances with more stringent provisions than those contained in the State ordinance. For this reason the bacteriological examination of most of the milk samples from the State at large is undertaken in the laboratories of the State Department of Agriculture. However,

Richmond has its own milk ordinance and has its milk samples examined in the city-supported laboratory of the State Department of Health. The laboratory is not equipped for pathological work, nor does it prepare any biological products.

On behalf of other bureaus of the department and of county health organizations the Bureau of Laboratories undertakes the preparation and standardization of chemicals and reagents, prepares tuberculin and sterile saline solutions in glass ampules for local health officers and clinicians, supplies certain reagents and media for use in branch laboratories, and prepares field kits for the Bureau of Communicable Diseases.

With a staff whose time is fully occupied with routine work, and with no funds for special studies, the bureau has not been able to undertake an appreciable amount of research. Recently, however, the bureau has collaborated with the United States Public Health Service in the evaluation of tests for the serodiagnosis of syphilis. Also, studies to differentiate between agglutinins due to vaccination and those resulting from active typhoid infection, by the use of H and O antigens, have been in progress.

The number of examinations undertaken in the central laboratory during the year 1936 totaled 106,033 for the State and 35,152 for the City of Richmond. Some of the more important of these, with the number of each, were as follows:

Wassermann	55,662
Water	8,349
Tuberculosis	4,482
Intestinal parasites	3,179
Blood cultures	2,601
Kahn	1,337
Milk	141

k. *The State Tuberculosis Sanatoria.*—Virginia maintains three institutions for the care and treatment of patients suffering from pulmonary tuberculosis. Each of these institutions is under the immediate charge of a medical superintendent specially trained in tuberculosis, while general administration and control are vested in the State Commissioner of Health. Funds for capital outlay, maintenance, and operation are appropriated by the State to the State Health Department.

Two of the sanatoria are reserved exclusively for the use of white patients, but applicants must be legal residents of the State of Virginia in order to be eligible for admission to any of the three institutions. Suitable patients are admitted upon the recommendation of private physicians in the order of their applications, except that preference is given to applicants who reside in homes where there are young children.

Approximately one-third of the beds available in each sanatorium are free. In the white institutions pay patients receive board, medical and nursing care, and lodging at a cost of only one dollar per day each. At the colored sanatorium, patients are charged $20 on admission which

covers x-ray, board, laundry, medical and nursing care, and a thermometer, for a period of twenty-eight days. After the expiration of this period the charge is fifty cents a day. Expenses in excess of the modest charges borne by patients are met from State appropriations.

The State tuberculosis sanatoria, and the number of free and pay beds at each are as follows:

Name of Institution	Locality	Beds		
		Pay	Free	Total
Catawba Sanatorium	Catawba	230	110	340
Blue Ridge Sanatorium	Charlottesville	190	80	270
Piedmont Sanatorium	Burkeville	100	50	150
Total		530	240	760

Members of the staffs of these sanatoria take no part in the county clinics conducted by the tuberculosis division of the Bureau of Rural Health. They do, however, cooperate closely with the Bureau of Rural Health and keep the latter informed when patients from the several counties die or are discharged from these institutions. All of the sanatoria maintain schools of nursing from which those who complete training may become certified nurses in tuberculosis after passing the State Board of Examiners for Nurses. Nurses from the white sanatoria may qualify themselves to become registered nurses by satisfactorily completing a third year of training at the University of Virginia Hospital or the Memorial Hospital at Richmond. The University Hospital medical staff is available for consultation at Blue Ridge Sanatorium, and surgeons from the university undertake much of the chest surgery.

In 1930 the General Assembly (Chapter 179) appropriated $50,000 from which the State Health Commissioner was authorized to pay to local sanatoria which complied with certain requirements, one-half of the actual per diem cost of maintaining all Virginia residents at such sanatoria. Subsequently this appropriation was reduced to $35,000 per annum, but was again restored to $50,000 by the General Assembly at its 1938 session.

The hospitals receiving subsidies from this fund at present, with the number of beds available for tuberculosis patients are as follows:

Name of Institution	Locality	Beds
Hilltop	Danville	45
Tidewater	Lynnhaven	51
Grandy	Norfolk	100
Pine Camp	Richmond	286
Total		482

These, with the 760 beds in the three State sanatoria, give a total of 1,242 beds, or an average of about one bed for every two deaths (average annual number of deaths during the five year period 1932-1936 was 2,003) that occurred each year during the period 1932-1936.

In addition to the increased allotment, mentioned above, in subsidies to local sanatoria, the 1938 session of the General Assembly provided $25,000 a year for the biennium 1938-1940 for the surgical treatment of tuberculosis, and funds for capital outlay to provide an additional 280 beds at the three State sanatoria—100 beds each at Blue Ridge and Piedmont, and 80 at Catawba Sanatorium.

1. *Vital Statistics.*—The average annual birth rate per 1,000 population in Virginia during the decade 1927-1936, was about 22.3. The colored birth rate has been slightly but persistently higher than the white rate, and there has been a slight downward trend of both white and colored rates. The general death rate for the State during this decade has stood at an annual average of about 12.4 deaths per 1,000 population. With an annual average rate of 10.5 and 17.4 per 1,000 for white and colored, respectively, there has been no noticeable downward trend.

Statistical analyses of the deaths caused in recent years in Virginia by some of the more important communicable diseases have been prepared and may be found in the appendix to this report. (See tables *4* to *29*, appendix). As will be seen from Table No. *7*, the six communicable diseases—typhoid fever, scarlet fever, measles, whooping-cough, diphtheria, and cerebrospinal meningitis were responsible for only 3,307, or .022 per cent of the 150,325 deaths from all causes during the period 1932-1936. On the other hand, pneumonia and influenza were responsible for 11,048 and 4,825 deaths, respectively, during the same five-year period.

Diseases of the heart, and cerebral hemorrhage and softening cause nearly one-third of the approximately 30,000 deaths that occur annually in the State. Other major causes of death, in the order of their importance are nephritis (101.3 deaths per 100,000 population in 1935), cancer (84.7 per 100,000 during the period 1932-1936), accidents (83.7 per 100,000 in 1935), and tuberculosis (all forms, 81.8 per 100,000 population, 1932-1936). The infant mortality rate has declined from 88.0 per 1,000 live births for the period 1917-1921, to 70.0 for the five years 1932-1936. The maternal death rate has declined from 8.3 per 1,000 live births for the period 1917-1921, to 6.3 for the period 1932-1936.

In spite of Virginia's sustained efforts against tuberculosis during the past thirty years, this disease continues to be one of the State's major public health problems. Virginia is one of a group of States, including Maryland, Kentucky, and Tennessee which is burdened with one of the highest *resident* tuberculosis death rates of any State in the Union. Even after due allowance is made for the influence of the Negro population on the death rate, it appears that climatic or other conditions prevailing in certain sections of the group of States mentioned above are particularly favorable to the propagation of tuberculosis.

The tuberculosis death rate (all forms) in Virginia has declined from an average of 155.2 for the five year period 1917-1921 to an average of 81.8 for the period 1932-1936. The death rates among white persons for these respective periods were 102.3 and 52.4, while among Negroes the rates were 278.7 and 163.6.

The 1936 *resident* tuberculosis death rates by congressional districts vary from a minimum of 33.0 to a maximum of 64.3 for white persons, and from a minimum of 111.1 to a maximum of 179.0 for Negroes. In general, the rates among white persons are highest in Southwest Virginia, through the Great Valley, and toward the northern border, while almost the exact opposite is true among Negroes—their highest rates (and incidentally the highest proportions of the Negro population) prevailing in the eastern and southern counties of the State. The above figures for 1936 exclude deaths that occurred in a number of institutions. Further statistical details may be found in Tables Nos. *8* to *12*, of the appendix.

m. *Health Department Finances.*—The fiscal year of the State Department of Health is the same as that of all other departments of the Government of Virginia, namely, from July 1, to June 30th of the following year. State funds available each year for expenditure by the State Department of Health comprise the annual appropriation made by the legislature from the State's *general fund* plus unexpended balances from funds available for the previous year. The appropriation bill for the biennium 1934-1935 provided for a reduction in the annual compensation of each official and employee of the State Government, except officials and employees in the legislative department and the judiciary, amounting to 10 per cent of the basic rate of all salaries or wages. Such reductions were effective during the period July 1, 1934, to June 30, 1937, amounting in the latter fiscal year to a total of $12,500. In addition to the *State* funds, just referred to, the department receives through the State Department of Finance expendable allotments from federal, local, or other sources which, added to the State funds, constitute all funds available to the State Department of Health for expenditure. Funds available to the State Department of Health proper, not including the State tuberculosis sanatoria, for the four fiscal years ending June 30, 1937, may be shown according to the sources from which they were derived as follows:

Fiscal Year	Total	State	U.S.P.H.S.	U.S.C.B.	Local	Other
1933–1934..	$ 475,373 17	$347,594 08	$ 664 95	.....	$127,114 14	.....
1934–1935..	504,851 29	363,511 40	38,171 07	.....	103,168 82	.....
1935–1936..	706,683 67	395,644 73	119,864 38	$ 56,299 91	124,874 65	$10,000
1936–1937..	1,014,601 21	427,934 47	223,049 95	176,212 00	187,404 79	.....

The State appropriation to the Health Department, exclusive of the State tuberculosis sanatoria, for the fiscal year ended June 20, 1937, was $411,755. From this a total deduction of $12,500 was made from the

salaries of the employees, leaving a balance of $399,255. Balances from the previous year, plus receipts from the United States Public Health Service, the United States Children's Bureau, and from cities, towns, and counties made a total of $1,014,601.21 available for expenditure. These receipts, with the respective percentages from the various sources, were as follows:

Source of Funds		Amount	Per Cent
State appropriation	$411,755 00		
Less deductions	12,500 00		
	$399,255 00		
Balances from previous year	28,679 47		
		$ 427,934 47	42.2
United States Public Health Service		223,049 95	21.9
United States Children's Bureau		176,212 00	17.4
Local contributions		187,404 79	18.5
Total		$1,014,601 21	100.0

The allocation of funds to the various bureaus and divisions of the State Department of Health to cooperating county health departments, and to local hospitals as State aid for the treatment of tuberculosis patients during the period July 1, 1936, to June 30, 1937, was as follows:

Central Administration	Sub-Total	Total Expenditures	Per Cent of Total
Bureau of Administration	$ 23,351 63		
Division of Health Education	6,459 31		
Rotating fund for biologicals and arsenicals	17,617 74	$ 47,428 76	9.0
Bureau of Rural Health	$ 55,428 45		
Division of Tuberculosis Out-Patient Service	43,783 94	99,212 39	18.8
Bureau of Communicable Diseases	$ 13,997 17		
Division of Venereal Disease Control	5,956 06	19,953 23	3.8
Bureau of Public Health Nursing		12,951 39	2.5
Crippled Children's Bureau		124,862 45	23.8
Bureau of Industrial Hygiene		13,168 19	2.5
Bureau of Sanitary Engineering	$ 22,254 62		
Shellfish Sanitation	20,916 55	43,171 17	8.2
Bureau of Vital Statistics		39,305 07	7.5
Bureau of Maternal and Child Hygiene	$ 52,376 60		
Division of Mouth Hygiene	44,239 33	96,615 93	18.5
Bureau of Laboratories		28,314 12	5.4
Total for Central Administration		$524,982 80	100.0
Allocations to county departments of health		377,808 42	
State aid to local tuberculosis sanatoria		33,748 47	
Total expenditures from funds available from all sources		$936,539 59	

Of the total basic appropriation for the year 1936-1937 of $399,225 from the general fund of the State, $64,312.48, or 16 per cent, was spent to support health activities in cooperating counties and districts of the State. From the above table it will be noted that a total of $377,808.42 was spent for the maintenance and operation of these local health departments. This represents 40.3 per cent of the $936,539.59 spent by the department during the year ended June 30, 1937. The source of these funds may be tabulated as follows:

Source of Funds	Amount	Per Cent
United States Public Health Service	$156,384.02	41.3
Counties	118,034.02	31.2
State Appropriation	64,312 48	17.0
United States Children's Bureau	39,077 90	10.4
Total	$377,808 42	100.0

The statutes of the Commonwealth of Virginia do not contain a law defining the basis for rendering State aid to counties. The annual appropriation bill, however, provides a lump sum for this purpose, and the responsibility of making allocations to counties and districts is placed upon the commissioner and his assistants.

In addition to the budget of the State Department of Health proper, the Commissioner of Health is responsible for the fiscal transactions of the three State tuberculosis sanatoria, and funds for their maintenance and operation are allocated to the State Department of Health. Expenditures by these three institutions for the year ended June 30, 1937, as shown in the report of the State Comptroller, amounted to $494,976.64 as follows:

Catawba Sanatorium	$ 225,838 70
Blue Ridge Sanatorium	167,887 83
Piedmont Sanatorium	101,250 11
Total	$ 494,976 64

The total of all expenditures by the department, including the State sanatoria, during the year ended June 30, 1937, was $1,431,516.23, or 2.0 per cent of the $71,614,336 spent by the Commonwealth for all purposes.

C. LOCAL HEALTH ORGANIZATION

1. Introduction

As stated in the general introduction to this section the cities in Virginia are organized under separate charters which provide specifically for the establishment of public health services by those local governments. Principally for this reason the State Department of Health

has centralized its attention to the counties, or the rural sections of the State, although some of the cities actually have only part-time health services or none at all.

With the exception of Chapter 368 of the Acts of 1932, providing for optional forms of county organization and government, the laws of Virginia do not make it mandatory that a county shall maintain a health department, either part-time or full-time. Sections 1496 and 1498 of the Virginia Code, 1936, read in part as follows:

> 1496. If any city, town, or county authorized by law to appoint a local board of health or health officer shall omit to do so, the State Board of Health may exercise the authority and perform the duties of such local board or health officer until such local board of health be established or such health officer regularly appointed, whereupon the jurisdiction of the State Board of Health or its officer shall cease.
>
> 1498. Each local board of health may elect a health officer for its city, town, or county, but if no local health officer be so elected the secretary of the local board of health shall act as health officer for his city, town, or county.

In Henrico and Albemarle Counties where the county manager and county executive forms of government, respectively, have been adopted, it is mandatory that each maintain a health department as one of the established departments of the county government. Arlington County has adopted a county manager form of government, set forth in an earlier act (Chapter 167 of 1930), under the provisions of which constitutional elective officers are retained. Although this law does not specifically provide for a county health department, Arlington has had full-time health service since 1919, when it was first established.

Public interest in rural health work dates back to 1910, when the Bureau of Rural Sanitation was organized within the State Health Department. The activities of this bureau were concerned chiefly with the campaign against hookworm and typhoid fever. As time passed this work was intensified and expanded by the establishment in many counties of a trained sanitation officer, and later by the addition of a nurse. As the value of the services rendered by these employees grew in the appreciation of local officials and of the general public, the need of a trained health officer to direct local health activities was gradually recognized and the first full-time health officer was appointed to Norfolk County in 1916. As a means of stimulating organized health work in rural areas under a trained or experienced health officer, the State established the principle of allowing State aid to counties or groups of counties known as health districts that agreed to set up and partially finance an approved county or district health department. Prior to the appointment of the present commissioner State aid has been given to a number of counties that employed a sanitation officer, a nurse, or both. In 1914 this practice was discontinued and thereafter State aid was granted only to counties that provided for full-time health departments consisting of a minimum staff—a medical health officer, a nurse, a sanitation officer, and a clerk. Practically throughout this developmental period the work has been assisted by financial grants from such extra-State organizations as the Rockefeller Foundation and the United States Public Health Service, such funds being

administered through the State Department of Health. In the three counties that have adopted optional forms of local government, funds granted as State aid are paid into the county treasuries to be administered by the county health officer under the supervision of the county manager or the county executive. In return for this State aid the Commissioner of Health reserves the right to pass upon the qualifications of the health officer to be employed. Of course the State Department of Health always is ready and willing to render advisory and technical services to these counties, but it assumes no administrative control.

Plans for financing all other county health departments are made by the director of the Bureau of Rural Health in consultation with the boards of supervisors of the several counties. At these conferences an agreement is reached as to what proportion of the total cost of operating the department is to be borne respectively by the county, the State, and such other organizations as currently may be contributing funds in support of these activities. Funds for the maintenance of such departments are paid into the State treasury and are disbursed by the State Department of Health in the same manner as it disburses all other expendable funds. Under this arrangement the county health officers are appointed by the county supervisors for an indefinite term. Selections must be made, however, from a list of applicants approved by the State Commissioner of Health, to whom the appointee becomes directly responsible.

During the year 1936-1937, funds amounting to $377,808.42 were expended through the State Department of Health for the maintenance of cooperating district departments of health. This sum includes all amounts paid to Albemarle, Arlington, and Henrico Counties to support their local health activities, but it does not include amounts expended by the counties themselves since these three counties administer their health funds through their local treasuries. These funds were received from the following sources:

Source of Funds	Amount	Per Cent
United States Public Health Service	$156,384 02	41.3
County Contributions	118,034 02	31.2
State Appropriation	64,312 48	17.0
United States Children's Bureau	39,077 90	10.4
Total	$377,808 42	100.0

On March 1, 1938, there were 27 cooperating district departments of health operating on a full-time basis. These districts comprised 48 counties, organized as follows:

Total Districts	Districts Comprising				
	One County	Two Counties	Three Counties	Four Counties	Seven Counties
27	18	2	5	1	1

Although, as stated elsewhere, cities in Virginia are separate and distinct from the counties in which they happen to be located, a number of cities are cooperating with one county or a group of counties to form a single health district. In such cases the cities bear varying proportions of the cost of the health department. Based upon the 1930 census, the population of these districts varies from a maximum of 96,205 in the district comprising seven counties, to a minimum of 12,100 in the single county health district of Sussex. The percentage distribution of the State's population receiving health service in 1938 was as follows:

	Population	Percentage of Total
Population in counties with full-time service	1,099,014	45.4
Population in cities with full-time service	395,164	16.3
Population in cities with part-time service	219,319	9.1
Remainder of State	708,354	29.2
State Total	2,421,851	100.0

The consolidation of counties, or of counties and cities, for the purpose of more efficient and more economical administration of health services has been effected on an arbitrary and entirely functional basis. No group of counties has as yet undertaken geographical consolidation under the Permissive Act passed by the 1932 session of the General Assembly, nor have several departments of the State Government agreed upon a plan for the functional consolidation of their several services which would prevent the overlapping of functional boundaries. In its report to the governor and General Assembly, January 1936, the Virginia Commission on County Government offered what would appear to be a very logical plan for regrouping the counties of Virginia into larger districts. Any such regrouping would, of course, depend upon the result of popular votes, but public support of this measure might be strengthened if such functional consolidation as may be undertaken by departments of the State Government were applied on a uniform basis.

2. County Boards of Health

The State Board of Health is required by law[1] to appoint annually three residents of each county who, with the county clerk and the chairman of the board of supervisors, will constitute a county board of health. The law specifies that at least one of the appointed members of the board must be a physician. Each board must select from its members a secretary who must be a physician and who must serve for one year or until his successor is appointed.

Duties of the County Boards of Health

County boards of health are not required by law to elect county health officers, but they are authorized to do so if they see fit. If no local health officer is elected the secretary of the local board of health acts as health officer for the county. This procedure is in effect in the 52 counties of the State that are not maintaining full-time county health services. The duties of these boards, as defined by law are:

1. To have charge of the sanitary affairs of the county.
2. To have control of the prevention and eradication of contagious and infectious diseases, and the removal and quarantine of suspects. (Code, 1936, Section 1493.)
3. To adopt and enforce reasonable rules and regulations as they may deem necessary for the control of communicable diseases. (Code, 1936, Section 1494.)
4. To report weekly to the State Board of Health all cases of infectious, contagious, communicable, or dangerous diseases which have occurred under their jurisdiction.
5. To confer with representatives of the State Board of Health upon the occurrence of dangerous communicable diseases and to cooperate with them in the suppression of such diseases when there is danger of their spreading to adjoining jurisdictions. (Code, 1936, Section 1497.)

3. County or District Health Officers

Full-time district health officers are employed at present by 18 single counties and by nine districts comprising from two to seven counties. These districts sometimes also include one or more cities.

In the three counties that have adopted optional forms of county organization and government under the Permissive Acts of 1930 and 1932, respectively, the health officers are appointed by the county manager or by the county executive to whom the health officer becomes responsible. In view of the State aid received by these counties for local health work, however, these appointees must be approved by the State Health Commissioner.

In those counties or groups of counties that have retained the constitutional form of government local health officers are usually appointed by the boards of county supervisors from a list of applicants approved by the State Health Commissioner. For districts comprising several

[1]The Virginia Code, 1936, Section 1492.

counties these appointments are sometimes made outright by the commissioner. In each case, however, the health officers become directly responsible to the Commissioner of Health in return for the State aid which each county receives.

The qualifications, tenure of office, and salaries of county or district health officers have not been fixed by law. Under the present arrangement State aid is granted only to those counties or districts that agree to the appointment of a health officer whose qualifications are approved by the State Health Commissioner. The present demand for trained health officers makes it somewhat difficult to obtain entirely suitable candidates, but the commissioner has endeavored to recommend only those who by training or experience are best qualified for the positions to which they are to be appointed. In furtherance of the plan to provide well-trained local health officers, the State Department of Health in cooperation with the United States Public Health Service has recently extended the opportunity of special training to as many district health officers as possible.

County health officers are appointed for a period of one year. Renewal of appointment is subject to the continued availability of funds and the quality of service rendered during the preceding year.

The duties of county health officers as defined by law are to be found in Section 1498 of the Code of Virginia, 1936, which reads in part as follows:

> ". . . Every such health officer or secretary acting as such health officer shall have power to enter and inspect both public and private premises where he has reason to suppose any nuisance or any contagious or infectious disease exists, when the protection of the public health demands it. He shall collect and preserve such vital statistics, including marriages, births and deaths, as may be required of him by the State Board of Health, and shall execute and enforce the orders of his local board."

The programs undertaken by county and district departments of health are formulated with the object of providing generalized health services to the communities within the several health jurisdictions. The principal activities are concerned with the control of the communicable diseases, including tuberculosis and, in some counties, the venereal diseases. The amount of time devoted to the physical inspection and medical examination of school children is perhaps somewhat less than that practiced in the counties of many other states. The teachers in Virginia schools are trained to make physical inspections, and, consequently, they are able to screen out pupils that have physical defects or other conditions that require the attention of the health officer. Prenatal and infant care, which prior to the advent of social security funds had made slow and indefinite progress, is being extended as rapidly as possible under the guidance of the Bureau of Maternal and Child Health. Tuberculosis and orthopedic clinics are conducted by the State Department of Health at the request of county health officers. Preliminary arrangements and follow-up activities required in connection with these clinics are undertaken entirely by the local departments of health except in counties that have no health organiza-

tions. The State Department of Health also cooperates with local departments in the development of venereal disease clinics and other activities necessary for the control of these diseases. In a number of counties venereal disease clinics are conducted personally by the health officers and in organized counties all of the follow-up work is undertaken by them and their staffs. Dental clinics are available through the State Department to all counties that are prepared to guarantee 50 per cent of the cost of the work, and the Virginia Commission for the Blind conducts free eye clinics for children at the request of the local health authorities. As yet no machinery, either central or local, has been developed to cope with the problem of mental hygiene. Sanitation of the home and school environment is undertaken by trained sanitation officers under the direction of the county and district health officers. This work includes activities to insure the provision of safe water supplies and methods of sewage disposal at all homes and schools within the area under the jurisdiction of the department. Other activities include the sanitary supervision of public swimming pools and of tourist, recreation, and labor camps. These departments also function in a cooperative capacity with the State Department of Health in exercising sanitary control over public water supplies and sewerage systems. In general, local health departments have no control over the sanitary quality of milk and other foods. This responsibility is vested in the dairy and food division of the Department of Agriculture. If, however, cities and towns adopt milk ordinances with more stringent provisions than those contained in the State law, the provisions of the latter cease to apply and the local authorities thereupon become responsible for the administration of the new ordinance. By the adoption of such local ordinances the public milk supplies of fifteen communities recently have been placed under the supervision of county health departments and, of these, twelve communities adopted the standard milk ordinance of the United States Public Health Service.

D. RELATED FUNCTIONS OF OTHER STATE DEPARTMENTS

There are several other departments of the State Government vested with powers and duties that have a definite bearing on public health. Reference has been made to some of these in preceding sections of this report, but the following summaries serve to complete the picture of the health interests of the State Government as a whole.

1. State Department of Public Welfare

This department performs numerous functions that have an intimate bearing upon the health and the physical and mental welfare of the public. The powers and duties of the department may be summarized as follows:

1. It is required by law to visit all State institutions, except educational institutions, semi-annually, and to investigate the condition of State institutions when required by the governor.

2. It inspects and licenses all child-caring institutions and agencies in the State.
3. It must inspect all jails and almshouses at least once a year and report conditions to county and city officials. It has no executive power over such institutions.
4. It is the agency for the care of all dependent, delinquent, and neglected children committed by the courts to the State.
5. It has supervision of all county and city social agencies of a governmental character.
6. It is responsible for the handling of all cases of dependency and defectiveness between Virginia and other states.
7. It is the sole agency for the investigation of charitable and penal cases in the State, including pardon and parole cases.
8. Under the reorganization act, all State institutions and agencies of a penal, eleemosynary, or corrective nature and all institutions for the mentally disturbed are grouped in the Department of Public Welfare as *associated institutions and agencies.*

In 1932 the Assistant State Health Commissioner was designated as medical adviser to the State Department of Public Welfare for specific duty in connection with medical and sanitary service in the jails of the Commonwealth, and general duty in the public welfare institutions and agencies. The medical adviser is assigned by the Health Department to the Department of Welfare. Under the interdepartmental agreement, however, he acts as liaison officer between the two departments in matters relating to the medical care and health protection of persons segregated in county and city jails, convict camps, and various public institutions under the supervision of the Department of Public Welfare.

In connection with the care of dependent, delinquent, and neglected children, the Department of Welfare maintains a bureau of mental hygiene. For several years the bureau conducted mental hygiene clinics in various localities in the State in cooperation with health departments, school authorities, social agencies, and other recognized agencies, but insufficiency of funds has made it necessary to curtail drastically or discontinue this service. The major function of the bureau at present consists of careful physical, psychological, social, and psychiatric studies of all children committed by the courts to the Department of Welfare.

The 1938 session of the General Assembly enacted a bill known as the Public Assistance Act of 1938. The purpose of this act is "to provide financial aid and assistance to and for certain needy persons in *need* of public aid or assistance." The act requires every county and city, or combination thereof, to have a welfare department and to make sufficient appropriations to carry out the purposes of the act. State administration of the act is vested in the State Board of Public Welfare and the Commissioner of Public Welfare, except the program of Aid to the Blind, which is vested in the Virginia Commission for the Blind. State administrative functions include general supervision, establishing and maintaining personnel standards, promulgating rules and regulations, making allocations and reimbursements, keeping reports, records, and statistics, and assuring uniform and efficient administration of the act in the counties and cities.

The Public Assistance Act of 1938 provides for relief under the following three Federal categories: Old Age Assistance, Aid to Dependent Children, and Aid to the Blind. Funds for these purposes are provided by Federal, State, and local governments. The act does not provide a pension system. Payments vary according to the needs of each case, due allowance being made for property, income and actual or potential support from any and all sources. All assistance is supplementary to other income and in no case may old age assistance in excess of $20.00 per month be granted.

Benefits under the General Relief section of the act are not limited, as under the 1936 Act. The funds for providing these services are supplied by the State and the counties or cities, the latter being required to appropriate an amount equal to 60 per cent of the State appropriation. Under the governor's rules and regulations, formulated in accordance with this legislation, public assistance funds may be used for medical care and hospitalization in any and all relief cases.

State schools for deaf and blind children are maintained at Staunton and Newport News, the former for white children and the latter for colored. These institutions are governed by their own boards of directors, appointed for terms of four years by the governor with the consent of the senate. The Virginia Commission for the Blind, an associated agency of the Department of Public Welfare, maintains workshops at Charlottesville, Lynchburg, and Norfolk, where vocational training is provided for the blind. In addition the commission conducts eye clinics throughout the rural sections of the State at the request of local health or school authorities. The nominal cost of glasses supplied and drugs used for indigent children is met by the local authorities or by some local organization interested in helping.

2. The State Department of Education

Responsibility for the health program in the public free schools of Virginia is vested jointly in the State departments of education and health. Legal authority for these two departments to undertake this important work is found in Chapter 327 of the Acts of 1920, commonly known as the West Law. Sections 3, 4, 5, and 6 of this act read as follows:

> 3. That after the first day of September, nineteen hundred and twenty, all pupils in all the public elementary and high schools of the State shall receive as part of the educational program such examinations, health instruction, and physical training as shall be prescribed by the State Board of Education and approved by the State Board of Health, in conformity with the provisions of this Act.
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> 4. In order that the teachers of the Commonwealth shall be prepared for health examinations and physical education of school children, every normal school of the State is hereby required to give a course, to be approved by the Superintendent of Public Instruction and the State Health Commissioner, in health examinations and physical education, including preventive medicine, physical inspection, health instruction and physical training. Upon which course every person graduating from a normal school must have passed a satisfactory examination, and every normal school certificate shall, therefore, indicate as a prerequisite a knowledge of preventive medicine, physical inspection, health instruction and physical training.

5. The State Board of Education, with the approval of the State Board of Health, shall establish regulations whereby on or after September, nineteen hundred and twenty-five, no applicant may receive a certificate to teach in the schools of this State who does not present, first, satisfactory evidence of having covered creditably an approved course in general physical education in a training school or course for teachers recognized by the State Board of Education as a school or course in good standing. But the State Board of Education may modify or waive entirely the requirements of this section whenever in its opinion such modifications or waiver is necessary to prevent the impairment of the teaching force of the public school system.

6. The State Board of Education, with the approval of the State Board of Health, shall appoint a supervisor of physical education qualified and authorized to supervise and direct a program of hygienic instruction and physical education for elementary, secondary, and normal schools of the State, and shall appoint such other employees and authorize such expenses for personal service, printing, and so on, as may be necessary to the proper and effective administration of the program authorized by this act.

In carrying out the mandates of this legislation the education and health departments work in close cooperation, the Department of Education placing principal emphasis on health education and the Department of Health emphasizing health service. The Department of Education employs a supervisor of health and physical education whose entire time is devoted to the physical and health education of pupils in the public schools of the State. The responsibilities of the health department for cooperating with the Department of Education in matters relating to disease prevention, health promotion, and health education are discharged by the director of the Bureau of Maternal and Child Health. These cooperative efforts include the preparation of the courses of health instruction to be employed in the teacher training institutions of the State as required by the West Law. They also include the preparation of suitable programs of health instruction to be instituted as part of the curriculum in the public free schools.

In view of the marked variation in conditions prevailing in different sections of the State, it has not been found practicable to adopt a standard or uniform program of health education and health service in the schools of the State as a whole. In lieu of this, the authorities have endeavored to study the needs of various localities and to devise ways and means that appeared to offer the best solution of each local problem. Programs involving dental hygiene, the sanitation of school buildings and premises, the provision of safe water supplies, immunization campaigns, and the rehabilitation of crippled children have been undertaken in practically every school in the State. But perhaps the only project that has been applied uniformly in all schools of the State is the so-called Five Point Program which serves as a minimum standard of the physical fitness of each pupil. Inspections or tests are conducted by the teachers, and any pupil found to meet the minimum standard adopted by the State in respect to vision, hearing, teeth, throat, and weight is classified as a *five point pupil.* Any pupil with remediable defects can qualify for this classification by securing the necessary corrections. The plan has been credited with producing many thousands of corrections of physical defects.

The State Department of Education conducts a quinquennial census of all persons in the State between the ages of 7 and 20 years. This census classifies deaf, blind, and other physically handicapped children and makes it possible for the proper authorities to locate and render assistance to many children that would otherwise be neglected. Except in a few of the cities very little has been done toward the provision of special classes or other facilities for physically and mentally handicapped children. Another problem that awaits attention is that of the school child that presents various conduct disturbances, delinquent tendencies, or other mental disorders.

3. The Department of Agriculture and Immigration

The work of this department in the control of bovine tuberculosis, Bang's disease, and other animal diseases, and through the sanitary control of food and milk supplies in enforcing the pure food laws, has a most important bearing upon public health. In respect to bovine tuberculosis, Virginia is now a fully accredited area, tubercular infection among cattle having been reduced to less than one-half of one per cent. A practical program for the eradication of Bang's disease has been worked out, and, with the cooperation of the Federal Government and under a new statute enacted by the 1938 session of the General Assembly, control measures are being extended throughout the State as rapidly as possible. At the close of the year 1936-1937, tests had been completed in fifty-five counties and were in progress in nineteen others. From the beginning of the work on July 1, 1934, to the end of the year 1936-1937, some 28,000 diseased animals had been removed for slaughter.

State administration of the laws governing the production and distribution of milk and dairy products, as well as other foods and food products, including the sanitation of places used in the manufacture, packing, storing, sale, and distribution of food and food products, is vested in the Dairy and Food Division of the Department of Agriculture and Immigration. The only exception to this is the administration of the laws relating to the sanitation and marketing of shellfish and crabmeat which was transferred to the State Health Commissioner in 1927 and 1930, respectively. The duties of the Dairy and Food Division include enforcement of the laws prohibiting the perpetration of frauds on the public, such as the adulteration and misbranding of foods.

The present law governing the sanitation of dairies and dairy products make it unlawful for any person, firm, or association to bring into or receive in the State for sale, or to sell or offer for sale, or distribute therein, or to have in his possession with intent to sell any milk or milk products, with certain specified exceptions, who does not possess an unrevoked permit from the Commissioner of Agriculture. The provisions regarding dairies, cows, milkers, utensils, water supplies, capping, and other important items are applicable in all cases where more than two cows are kept. But the provisions of the act do not apply to cities and towns which have ordinances regulating the pro-

duction and distribution of milk and cream with provisions more rigid than those incorporated in this act.

Permits to sell milk and milk products to the public are issued to dealers free of charge after the dairy has been scored by an inspector from the Dairy and Food Division of the Department of Agriculture. The several grades under which raw and pasteurized milk legally may be labeled and sold are specified in the act, and all milk sold in the State must conform to one of these grades and be so labeled. In April 1938 a total of 781 dairies were operating under these official permits. Supervising these were three full-time dairy inspectors, each engaged in one of the three divisions into which the State has been divided for inspection purposes. During the year 1936-1937 a total of 1,027 samples of milk were collected by the inspectors for bacteriological examination. These were examined in the laboratories of the Department of Agriculture at Richmond, Harrisonburg, Nassawadox, Lynchburg, and Danville, and at the health department laboratory at Abingdon.

As was stated on page 31, the milk sanitarian attached to the Bureau of Rural Health is endeavoring to promote the adoption and enforcement of effective milk ordinances by towns located in counties that have full-time health departments. It is believed that efficient local control over the production and distribution of milk will do far more to safeguard the public health than any system of central control that would be economically practical. To enable local health authorities to administer these ordinances effectively, the sanitarian gives special training to and works in close cooperation with the county sanitation officers.

4. The Department of Labor and Industry

This department is charged with the enforcement of all laws relating to the inspection of mines, factories, mercantile establishments, mills, workshops, and commercial institutions in the State. Many of these services improve the health and welfare of the industrial worker and exercise considerable bearing upon the public health. Through its division of mines and quarries the department administers the regulations governing the operation of mines in the interest of safety. Inspectors may close any mine found operating under dangerous conditions, and investigations of serious accidents or explosions are followed by recommendations for the prevention of similar occurrences in the future.

Through administration of the laws governing conditions under which women and children work, the department insures that women and children work only the limited number of hours allowed by law, that children are properly certified as to age and physical fitness for indoor and outdoor occupations, and are not permitted to work at night, at hazardous occupations, or under morally degrading conditions. It is a responsibility of this division of the Department of Labor also to see that the proper number of chairs, stools, or other suitable seats are provided in various industrial establishments for the use of female employees. The factory inspection division inspects

factories, restaurants, mercantile establishments, shops, laundries, etc., to enforce the laws regulating safety and sanitary conditions in industry, including fire escape regulations which are applicable to public buildings and schools.

The newly created Bureau of Industrial Hygiene of the State Department of Health has been engaged recently in studies of materials and conditions that may be detrimental to the health of Virginia's industrial population. The degree or seriousness of the exposures to which workers are subjected, however, has not been sufficiently determined as yet to justify the formulation of a cooperative control program between this bureau and other State departments concerned.

5. The Department of Workmen's Compensation

The Workmen's Compensation Law is administered by a commission of three members appointed by the Governor for overlapping terms of six years. The commission is empowered to approve agreements as to compensation, to hear contested cases, and to supervise the general application of the law. Either employers or employees may elect not to operate under the act. If an employer so elects, and suit is instituted against him by an employee subject to the act, such an employer is not permitted to defend the suit on the grounds that the employee was negligent, that the injury was caused by the negligence of a fellow employee, or that the employee had assumed the risk of the injury. In a suit against an employer who accepts the act by an employee who elects not to operate under the act, the employer may avail himself of the defenses of contributory negligence of a fellow servant and assumption of risk, as such defenses exist at common law.

The present Virginia statute applies solely to injuries by accident arising out of and in the course of the employment. It does not include a disease in any form, except where it results naturally and unavoidably from the accident. Realizing the importance of accident prevention, the Department of Workmen's Compensation devotes a great deal of attention to such work.

E. RECOMMENDATIONS

As a result of a careful study of public health administration in Virginia, certain conclusions have been reached and are made the basis of the following recommendations:

1. That no major changes be made in the membership and methods of appointment of members of the State Board of Health, but that the law be amended to provide that the Commissioner of Health shall be the administrative head of the State Department of Health and that the State Board of Health shall exercise legislative functions and otherwise act in an advisory capacity to the Commissioner.

This board of seven members, selected from the several grand divisions of the State, is appointed by the governor for overlapping terms of seven years. It is vested legally with both legislative and ad-

ministrative functions. In the discharge of its duties, however, the board has recognized that its members neither have the time nor the technical training necessary to enable them intelligently to undertake administrative responsibilities. It has, therefore, very wisely placed the department's technical responsibilities upon its trained and experienced executive officer—the State Health Commissioner—and has limited its own activities to legislative, policy-forming, and advisory services. Such procedure constitutes sound public health policy, and the amendment recommended would bring the provisions of the law in conformity with present practice.

A board of seven members, comprising representative, outstanding, public-spirited citizens from the various divisions of the State would appear to be sufficiently large to bring to the problem wide interest and a broad general knowledge of the public health needs of the State. Moreover, the requirement that at least two members of the board shall be members of the Medical Society of Virginia, and one a member of the State Dental Association, insures representation on the board of two groups whose work is closely related to that of the State Department of Health.

2. That the law providing for county boards of health (see Page 25, section 5) be amended so as to provide for boards consisting of seven members (three ex-officio and four appointive) instead of five; that the terms of office of the four members appointed by the State Board of Health be four years instead of one year, the appointments being staggered so that one member shall retire each year; and further, that provision be made for the abolition of boards of health in counties comprising health districts and for their replacement by a single district board of health to serve in an advisory capacity to the director of the district department of health.

For the most part, Virginia legislation pertaining to county boards of health was enacted prior to the establishment of any full-time county or district health departments in the State. They were the only official health organizations in the counties, as indeed they still are in about half of the counties. Each board consists of three members appointed for a term of one year by the State Board of Health, and the county clerk and the chairman of the board of supervisors, ex-officio. According to the law at least one of the appointive members must be a physician, but in some counties two, or even three, of these appointees are physicians. The duties imposed upon these boards are both executive and legislative, and in counties in which there are no organized health departments the local boards of health assume responsibility for whatever health activities may be undertaken. In counties that have established local health departments, however, the functions of these boards are limited to advisory and legislative functions only.

Whether such a board exercises executive functions or acts in an advisory capacity to the director of an organized county health department, it is obvious that the value of its services would be enhanced by increasing the terms of the members appointed by the State Board of Health to at least four years. Under the present one-year terms these members hardly have time to become interested in health matters

before their terms expire. Moreover, the duty of selecting annually several hundred suitable persons to appoint to the membership of county and corporation health boards consumes unnecessarily a large amount of the State Board of Health's time.

The recommendation has been made above that the membership of these boards be increased to seven. Such a board would bring greater breadth of interest and more varied points of view. The provision for four appointive members, also, would permit application of the conventional plan of having only one member retire each year. As to which three local officials should be designated as ex-officio members of the boards, consideration should be given to the division superintendent of schools, the county superintendent of public welfare, and, in organized counties, to the county health officer. Because of the intimate relationship of the services performed by these officials any of them probably would render greater services to the board than would the county clerk. These boards, if composed of public-spirited, civic minded persons who have the welfare of their communities at heart, can, with their diverse contacts and local influence, contribute immeasurably to the building up of informed public support, and can assist in the development of sound public health policies and practices.

3. That State aid to local health departments be continued and extended, but that preference be given to health departments organized to serve groups of counties (districts) as recommended by the State Department of Health.

4. That the State Department of Health, in cooperation with other departments of the State government, group the counties of the State into districts best suited to the functional consolidation of their services as a whole as a basis for more uniform developments in this direction in the future.

The experience of the State Department of Health has been that many counties, individually, have not been able to support an efficient full-time health department and that the area and population of other counties were too small to justify burdening them with the additional expense of a health department. At the present time 48 of the 100 counties in Virginia are receiving State aid in support of their local full-time health departments (see page 62). Health services in the other 52 counties are limited to such activities as may be undertaken by their respective county boards of health, some of whom employ a sanitation officer or a nurse, or both, and to certain state-wide services rendered by the State Board of Health.

Special studies have shown that a great many of the counties are too small (see pages 8 and 63) to permit the economical operation of efficient, modern governmental services. The economic wisdom of the geographical consolidation of several adjoining counties into a single local government unit has been demonstrated, and an act providing a method for such consolidation by popular vote was passed by the General Assembly in 1932. Thus far, however, the provisions of this act have not been applied in a single case. On the other hand the plan of so-called functional consolidation, in which certain governmental functions are performed in districts composed of two or more counties (see pages 14 and 62), has been tried by several departments

of the State government. Admittedly, this plan presents some very practical difficulties and fails to provide a simplified plan of county government. Yet, it would appear that many of these difficulties could be obviated, and better and more widespread services could be provided if each department of the State government, now contemplating or actually practicing functional consolidation, were to consolidate its services in identical groups of counties and thereby avoid the overlapping of functional boundaries. Moreover, if such a plan could be satisfactorily applied by the health authorities throughout the State, perhaps it would offer a means of providing efficient health service in all the counties of Virginia at a cost that the State and local governments could afford. Assuming that the counties could be grouped into 35 consolidated functional areas or less, in each of which a well-trained health officer (with perhaps a deputy in a few of the larger groups), a staff of several nurses, and a sanitation officer could provide adequate health service, the amount now being spent on rural health work would go a long way toward meeting the cost of this State-wide service.

5. That the State Board of Health, in cooperation with the State Commissioner of Health, be empowered to establish minimum qualifications for directors, nurses, and technical employees of the State Department of Health; for superintendents of public tuberculosis sanatoria; and for directors, nurses, and sanitation officials of county and district health departments, whether such departments receive State aid or not.
6. That employment on the staffs of the State and local departments of health be made more attractive by providing better salaries, facilities to enrich routine health activities by the inclusion of worthy research projects, security of tenure in office, and opportunities for postgraduate study.
7. That the State Department of Health adopt and apply the principle that all work of a given character required by any bureau in the department or by a local health department should be done by the bureau established to perform that, or closely related specialized services, thus insuring the functional integration of the component parts of the entire health organization.

In the application of this principle:

a. That the Bureau of Laboratories be provided with adequate trained personnel and facilities to perform all the laboratory services required by other bureaus of the State Department or by county departments of health, and that all branch laboratories, including those engaged in shellfish work, be placed under the supervision and control of the central bureau of laboratories, and,

b. That the Bureau of Vital Statistics be provided with sufficient trained personnel to enable it to render such technical guidance and specialized statistical services as may be required by other bureaus or county health departments, so that this bureau may function as the department's bureau of statistical methods.

Adoption of recommendation (a) would mean that the director of the bureau of laboratories, with his assistants, would be in a position to render such laboratory services as may be required in connection with communicable disease control and research, in the study and control of industrial hazards and diseases, and in the study and control of conditions affecting the purity of water, milk, shellfish, and other foods,

and the analysis of sewage, as well as the ordinary routine bacteriological analyses. In other words, this bureau would be functionally integrated with other bureaus and county health departments in such a fashion as to make it unnecessary for any other bureau to maintain a separate laboratory to undertake special investigations.

In connection with the supervision of local laboratories, the duties of the director would involve the frequent inspection of all branch laboratories to determine the efficiency of the work being performed, the laboratory needs of the different sections of the State, and the completeness with which these needs are being met.

At the present time the services of the Bureau of Vital Statistics consist principally of the collection, compilation, analysis, and preservation of data pertaining to marriages, divorces, births, and deaths. Morbidity data are similarly dealt with by the Bureau of Communicable Diseases, and special studies of a more technical nature are undertaken by a statistician attached to the Bureau of Administration. These activities constitute the department's bookkeeping and as such represent closely related functions. There is no question here of the efficiency of the services now being performed. The object is rather to raise the question as to whether closer coordination resulting from the consolidation of these services in a single well-staffed statistical bureau would achieve a more complete service with even greater efficiency and involve good economy. Of course such questions as the importance to the epidemiologist of having ready access to his records must be taken into account, but it would appear that such a bureau, properly integrated with the other bureaus, could undertake to advantage the greater portion of the routine compilations and analytical work now being done by them. Relief from these duties would frequently allow directors of other bureaus to devote more time to problems of greater immediate importance. Such a bureau also would be in a position to conduct special technical studies for other bureaus and county health departments and to render technical guidance in the set-up of statistical procedures, and services in the collection, analysis, and interpretation of data.

8. That the responsibility pertaining to the sanitation of milk and other foods, and of places where food products are produced, handled, stored, and sold, now vested in the Dairy and Food Division of the Department of Agriculture, be transferred to the State Department of Health.

9. That there be created in the Bureau of Sanitary Engineering a division of sanitation which shall, in cooperation with the county and district health departments, be responsible for general rural sanitation, including the sanitation of milk, shellfish, crabmeat, and all other foods and food establishments.

10. That the milk sanitarian and the sanitation officers now attached to the Bureau of Rural Health be transferred to the proposed division of sanitation of the Bureau of Sanitary Engineering.

11. That the State Department of Health be empowered to adopt and enforce a minimum sanitary code for the regulation of all food-handling establishments.

12. That educational and other appropriate means be undertaken to promote more widespread pasteurization of milk.

In several previous surveys, notably one by the New York Bureau of Municipal Research in 1927, the recommendation was made that the inspection of foods, dairies, cold storage, hotels, etc., be transferred from the Department of Agriculture to the Department of Health. An amendment to the law in 1927 transferred responsibility to the health department, and in 1930 the law was further amended to include crabmeat, scallops, and clams. Despite the fact, however, that the State Department of Health is the department of the State Government commonly regarded as the agency responsible for the protection and promotion of public health, that department is vested with almost no control over the sanitary quality of the public milk supply. Milk is the most important and widely consumed single article in the human dietary, and, because of the ease with which it is contaminated, and of its importance in infant mortality and in the transmission of certain dangerous communicable diseases, any health department lacking authority to exercise sanitary control over its production and distribution is greatly handicapped. It is true that no serious outbreaks of communicable disease ascribable to the contamination of public milk supplies have occurred recently in Virginia. This, however, does not mean that adequate barriers against any such occurrences in the future have been built up. The need for the establishment of such barriers still exists, and probably will continue to do so until the State Department of Health is provided with the necessary facilities and vested with adequate authority to execute the functions for which it was established.

Responsibility for determining the health of the animals from which milk is to be obtained and for promoting the economic aspects of the dairying industry would appear to be logical functions of the Department of Agriculture. But after the exercise of these functions its jurisdiction over milk should cease, and the duty to inspect, regulate, and supervise the sanitary quality of all milk and cream consumed or sold within the State should be vested in the State Department of Health.

The recommendation that food sanitation should be undertaken by the Bureau of Sanitary Engineering is in line with the performance of similar functions by this bureau, namely, the protection of water supplies, the sanitary disposal of sewage, and the sanitation of oysters, crabmeat, scallops, and clams. Moreover, this bureau has certain State-wide functions to perform, and if it were properly integrated with county and district health departments no doubt a highly effective cooperative sanitation program could be placed in operation. In his relations with local health departments, the director of the Bureau of Sanitary Engineering would work through the central bureau of rural health.

13. That a program incorporating the fundamental objectives of the Bureau of Maternal and Child Health and integrating the services of this bureau with those of the other bureaus of the department, of county health departments, and of other State departments and agencies, be drawn up for uniform application throughout the State.

14. That in the preparation of the courses in hygiene for the teacher training institutions, and in the preparation of the health program for the public schools, The State Department of Health be represented by a committee from the department, one member of which shall be the director of the Division of Health Education. (See pages 51, 52, 69 and 70.)

15. That the Crippled Children's Bureau, as such, be abolished, and that this service be transferred to the Bureau of Maternal and Child Health.

The activities now engaged in by the Bureau of Maternal and Child Health are concerned with the welfare of mothers during and after the child-bearing period and with the hygiene of child life from the prenatal period through infancy and the preschool and school ages. Supplementing the services rendered by this bureau, there are in the State Department of Health other bureaus and divisions whose activities are intimately related to the welfare of mothers and their children, and the same is true of the county and district health departments.

Responsibility for the health program in schools is shared jointly by the State Departments of Health and Education. Theoretically the Department of Health is responsible for health service in the schools and the Department of Education is responsible for the health education program in the schools. In reality this division of responsibility is in theory only, for, although two departments are concerned, the program is administered as a single service.

The diversified aspects of the health, economic, social, and mental problems that present themselves for adjustment in maternal and child life challenge sharply the intelligence, resourcefulness, and energy not only of the entire State government but of the State's private citizens as well.

It is no surprise, therefore, to find that steps are being taken by several of the other State departments to help to solve some of these problems. There have been developed in the Department of Labor and Industry facilities to provide at least a modicum of protection for women and children engaged in industry. In the Department of Public Welfare facilities are being developed to assist needy mothers in procuring medical, hospital, or material assistance for themselves and their children, and to provide medical and psychiatric examinations and custody or other appropriate care for dependent, delinquent, and neglected children. Other agencies of the State Government provide special eye clinics for needy children with poor vision, and schools for the deaf, blind, and feebleminded. The concern of lay organizations and groups in maternal and child welfare is manifested by the activities of such organizations as the State Federation of Parent-Teachers Association, Federation of Women's Clubs, Home Makers Clubs of Virginia, and others.

In the discharge of the duties for which the Bureau of Maternal and Child Health was created, the director of the bureau has consistently regarded this branch of public health as a cooperative enterprise. Accordingly, he has endeavored, with considerable success, to utilize the services of both official and non-official organizations in promoting the work. In planning for the future, however, the question arises as to whether it would be possible to utilize further and more effectively

the services of the other bureaus and divisions of the Department of Health, of the county and district health departments, of other departments of the State government, and of official and non-official organizations if a well-rounded integrated program were prepared for united action. In the preparation of such a program first consideration should be given to the objectives to be accomplished and the fundamental services that would be required for the accomplishment of those objectives. After determining through conferences what contributions can be made by the various agencies concerned, a program should be drawn up in broad outline which should be sufficiently elastic to permit its application regardless of local conditions and circumstances. The details of the programs adopted in different localities of the State will doubtless vary considerably, but the virtue of the kind of program suggested here is that it would define objectives, provide for fundamental services, encourage cooperative action, and insure the inauguration of a balanced program.

16. That there be created in the State Department of Health facilities for the conduct and integration of the general tuberculosis program.
17. That the scope of the services of the Division of Health Education be broadened by closer integration with the other services of the department and those of cooperating agencies, and by the provision of more personnel and funds.
18. That the Bureau of Industrial Hygiene, in cooperation with the Department of Labor and Industry and the Department of Workmen's Compensation, formulate a cooperative program for the prevention of illness and the protection of the health of industrial workers in the State.
19. That the rules and regulations of the State Board of Health anent the reporting of certain diseases be enlarged to include any disease which in fact arises out of employment, and that the Department of Workmen's Compensation be authorized to make awards in cases of such occupational diseases as it now does in accident cases.

APPENDIX

APPENDIX

APPENDIX—Continued

TABLE No. 1

The Counties of Virginia, Showing Area, Population (according to the 1930 Census), and Assessed Value as of June 30, 1936

COUNTY	(Square Miles) Area	Population		Assessed Values	
		Total	Per Cent Colored	Amount	Per Capita
Accomac	502	35,900	39.0	$12,798,434	$ 356 96
Albemarle	747	26,981	23.0	12,609,383	467 34
Alleghany	457	20,188	11.8	13,596,605	676 85
Amelia	371	8,979	51.4	3,409,362	379 70
Amherst	470	19,020	31.5	5,413,676	284 63
Appomattox	342	8,402	27.3	3,658,108	435 39
Arlington	25	26,615	12.2	26,455,083	993 99
Augusta	1,003	38,163	10.6	24,010,923	629 17
Bath	545	8,137	14.6	5,573,744	684 99
Bedford	791	29,091	24.0	15,037,403	516 91
Bland	360	6,031	1.7	1,570,105	260 34
Botetourt	548	15,457	14.3	7,390,404	478 13
Brunswick	557	20,486	56.1	8,328,640	406 55
Buchanan	514	16,740	1.2	3,936,333	235 15
Buckingham	584	13,315	43.6	3,245,547	243 75
Campbell	544	22,885	28.8	9,725,095	424 95
Caroline	529	15,263	50.9	5,366,882	351 63
Carroll	458	22,141	1.8	3,426,592	154 76
Charles City	188	4,881	79.6	1,813,303	371 50
Charlotte	496	16,061	42.0	5,334,869	332 16
Chesterfield	469	26,049	27.1	23,701,926	909 90
Clarke	171	7,167	22.2	4,933,914	688 42
Craig	333	3,562	0.4	1,390,108	390 26
Culpeper	384	13,306	32.3	7,725,843	580 63
Cumberland	293	7,535	57.8	2,098,243	278 47
Dickenson	325	16,163	1.9	4,451,796	275 43
Dinwiddie	517	18,492	60.5	7,077,375	382 73
Elizabeth City	53	19,835	30.8	8,044,928	405 59
Essex	258	6,976	54.9	2,000,807	286 81
Fairfax	416	25,264	19.3	16,983,581	672 24
Fauquier	666	21,071	29.8	16,272,021	772 25
Floyd	376	11,698	4.4	1,795,209	153 46
Fluvanna	285	7,466	39.5	3,801,067	509 12
Franklin	697	24,337	15.5	5,013,455	206 00
Frederick	431	13,167	6.2	6,063,660	460 52
Giles	369	12,804	3.9	9,121,392	712 39
Gloucester	223	11,019	39.5	3,999,868	363 00
Goochland	287	7,953	51.7	3,725,429	468 43
Grayson	425	20,017	3.5	2,257,972	112 80
Greene	155	5,980	16.6	1,173,601	196 25
Greensville	307	13,388	60.4	5,079,344	379 40
Halifax	814	41,283	45.8	13,821,980	334 81
Hanover	512	17,009	36.6	7,970,975	468 63
Henrico	255	30,310	21.2	34,043,995	1,123 19
Henry	442	20,088	29.3	4,802,908	239 09
Highland	422	4,525	3.4	2,856,425	631 25
Isle of Wight	314	13,409	51.6	4,340,785	323 72
James City	163	3,879	36.8	2,565,978	661 51
King George	180	5,297	35.5	1,644,116	310 39
King and Queen	320	7,618	54.8	1,794,548	235 57
King William	263	7,929	50.6	3,036,553	382 97

TABLE No. 1—CONTINUED

The Counties of Virginia, Showing Area, Population (according to the 1930 Census), and Assessed Value as of June 30, 1936

COUNTY	(Square Miles) Area	POPULATION		ASSESSED VALUES	
		Total	Per Cent Colored	Amount	Per Capita
Lancaster	130	8,896	44.6	$ 2,895,050	$325 43
Lee	446	30,419	1.6	4,870,582	160 12
Loudoun	519	19,852	21.9	14,963,467	753 75
Louisa	516	14,309	40.8	4,929,839	344 53
Lunenburg	430	14,058	44.3	5,592,622	397 82
Madison	324	8,952	27.1	3,316,103	370 43
Mathews	94	7,884	25.3	1,806,729	229 16
Mecklenburg	669	32,622	52.9	9,890,651	303 19
Middlesex	146	7,273	46.2	2,377,398	326 88
Montgomery	396	19,605	10.0	8,448,100	430 92
Nansemond	421	22,530	58.1	10,231,394	454 12
Nelson	473	16,345	27.9	6,681,101	408 76
New Kent	191	4,300	59.1	2,437,181	366 79
Norfolk	373	30,082	39.2	22,404,043	744 77
Northampton	239	18,565	53.8	9,597,195	516 95
Northumberland	205	11,081	41.9	3,620,908	326 77
Nottoway	310	14,866	45.0	6,377,577	429 00
Orange	359	12,070	31.4	6,999,257	579 89
Page	322	14,852	5.4	5,435,726	365 99
Patrick	485	15,787	8.7	2,405,899	152 40
Pittsylvania	1,012	61,424	34.1	17,696,739	288 11
Powhatan	273	6,143	51.4	2,225,477	362 28
Prince Edward	356	14,520	52.0	6,937,001	477 75
Prince George	289	10,311	25.7	6,595,369	639 64
Princess Anne	285	16,282	46.6	9,192,360	564 57
Prince William	345	13,951	18.6	6,957,637	498 70
Pulaski	333	20,566	11.1	7,876,059	382 97
Rappahannock	274	7,717	24.3	2,724,534	353 06
Richmond	204	6,878	38.7	1,884,483	273 99
Roanoke	295	35,289	9.5	22,850,339	647 52
Rockbridge	611	20,902	10.4	13,658,587	653 46
Rockingham	874	29,709	4.8	16,902,486	568 93
Russell	496	25,957	3.0	6,092,835	234 73
Scott	543	24,181	1.1	4,554,082	188 33
Shenandoah	510	20,655	2.4	9,060,322	438 65
Smyth	435	25,125	2.4	5,893,427	234 56
Southampton	604	26,870	61.0	9,388,344	349 40
Spotsylvania	412	10,056	25.6	4,382,042	435 76
Stafford	274	8,050	18.5	3,198,910	397 38
Surry	278	7,096	60.1	2,531,820	356 80
Sussex	515	12,100	66.2	6,072,975	501 90
Tazewell	531	32,477	8.3	8,884,766	273 57
Warren	216	8,340	9.9	3,021,016	362 23
Warwick	65	8,829	28.4	6,028,563	682 81
Washington	602	33,850	6.3	7,824,811	231 16
Westmoreland	252	8,497	43.8	2,983,608	351 14
Wise	420	51,167	6.2	14,250,000	278 50
Wythe	479	20,704	6.8	6,824,784	329 64
York	136	7,615	39.8	2,558,491	335 98
Totals	40,123	1,718,895	.....	$740,622,712	(av) $430 87

TABLE No. 2

Population of the State of Virginia (Estimated as of July 1), by Color, with Percentage Distribution according to Color, for the Years 1913-1936

YEAR	Population			Per Cent	
	Total	White	Colored	White	Colored
1913	2,143,428	1,465,190	678,238	68.4	31.6
1914	2,168,929	1,488,685	680,244	68.6	31.4
1915	2,194,430	1,512,180	682,250	68.9	31.1
1916	2,219,931	1,535,675	684,256	69.2	30.8
1917	2,245,432	1,559,169	686,263	69.4	30.6
1918	2,270,934	1,582,665	688,269	69.7	30.3
1919	2,296,436	1,606,161	690,275	69.9	30.1
1920	2,314,683	1,625,350	689,333	70.2	29.8
1921	2,325,674	1,640,231	685,443	70.5	29.5
1922	2,336,665	1,655,112	681,553	70.8	29.2
1923	2,347,657	1,669,994	677,663	71.1	28.9
1924	2,358,648	1,684,875	673,773	71.4	28.6
1925	2,369,640	1,699,756	669,884	71.7	28.3
1926	2,380,632	1,714,637	665,995	72.0	28.0
1927	2,391,624	1,729,517	662,107	72.3	27.7
1928	2,402,615	1,744,398	658,217	72.6	27.4
1929	2,413,607	1,759,280	654,327	72.9	27.1
1930	2,425,000	1,774,000	651,000	73.2	26.8
1931	2,430,000	1,782,000	648,000	73.3	26.7
1932	2,435,000	1,789,000	646,000	73.5	26.5
1933	2,441,000	1,796,000	645,000	73.6	26.4
1934	2,446,000	1,803,000	643,000	73.7	26.3
1935	2,453,172	1,801,726	651,446	73.4	26.6
1936	2,459,180	1,806,118	653,062	73.4	26.6

TABLE No. 3

Population of the State of Virginia and the United States with Number and Per Cent in Certain Age Groups, according to the United States Census of April 1, 1930

AGE GROUPS	Number		Per Cent	
	Virginia	United States	Virginia	United States
All Ages	2,421,851	122,775,046	100.0	100.0
Under 5	257,138	11,444,390	10.6	9.3
(Under 1)	(49,366)	(2,190,791)	(2.0)	(1.8)
5-9	291,875	12,607,609	12.1	10.3
10-14	269,626	12,004,877	11.1	9.8
15-19	255,757	11,552,115	10.6	9.4
20-24	217,603	10,870,378	9.0	8.9
25-29	176,938	9,833,608	7.3	8.0
30-34	156,596	9,120,421	6.5	7.4
35-44	294,235	17,198,840	12.1	14.0
45-54	236,090	13,018,083	9.7	10.6
55-64	148,131	8,396,898	6.1	6.8
65-74	80,750	4,720,609	3.3	3.8
75 and over	35,928	1,913,196	1.5	1.6
Unknown	1,184	94,022	.....	0.1

TABLE No. 4

Births and Deaths, with Rates per 1,000 Estimated Population, in the State of Virginia for the Years 1932-1936, with Average for the Five-Year Period 1932-1936

YEAR	Population (Estimated as of July 1)	Births		Deaths	
		Number	Rates Per 1,000 Population	Number	Rates Per 1,000 Population
1932	2,435,000	55,245	22.7	28,873	11.9
1933	2,441,000	51,460	21.1	28,410	11.6
1934	2,446,000	52,198	21.3	30,519	12.5
1935	2,453,172	51,373	20.9	30,354	12.4
1936	2,459,180	51,117	20.8	32,169	13.1
Average for Five-Year Period 1932-1936	.....	52,279	21.4	30,065	12.3

TABLE No. 5

Number of Deaths and Death Rates per 1,000 Estimated Population for the State of Virginia by Color, for the Years 1913-1936

YEAR	All Deaths			Death Rate Per 1,000 Population		
	Total	White	Colored	Total	White	Colored
1913	29,647	16,997	12,650	13.8	11.6	18.7
1914	30,117	16,918	13,199	13.9	11.4	19.4
1915	30,727	17,288	13,439	14.0	11.4	19.7
1916	32,144	18,404	13,740	14.5	12.0	20.1
1917	31,527	18,017	13,510	14.0	11.6	19.7
1918	*41,272	24,687	16,585	18.2	15.6	24.1
1919	31,397	18,445	12,952	13.7	11.5	18.8
1920	30,514	18,353	12,161	13.2	11.3	17.6
1921	28,534	17,225	11,309	12.3	10.5	16.5
1922	28,688	17,274	11,414	12.3	10.4	16.7
1923	30,760	18,773	11,987	13.1	11.2	17.7
1924	29,175	17,710	11,465	12.4	10.5	17.0
1925	29,343	17,523	11,820	12.4	10.3	17.6
1926	30,818	18,866	11,952	12.9	11.0	17.9
1927	28,772	17,503	11,269	12.0	10.1	17.0
1928	30,211	18,458	11,753	12.6	10.6	17.9
1929	31,229	19,297	11,932	12.9	11.0	18.2
1930	30,374	18,647	11,727	12.5	10.5	18.0
1931	29,996	18,443	11,553	12.3	10.3	17.8
1932	28,873	18,255	10,618	11.9	10.2	16.4
1933	28,410	18,004	10,406	11.6	10.0	16.1
1934	30,519	19,288	11,231	12.5	10.7	17.5
1935	30,354	19,263	11,091	12.4	10.7	17.0
1936	32,169	20,537	11,632	13.1	11.4	17.8

*Deaths of 2,669 soldiers, sailors, and marines not included.

TABLE No. 6

Number of Deaths and Death Rates per 1,000 Estimated Population (as of July 1, 1930) by Age Groups, for the State of Virginia and the United States Registration Area for Deaths, 1930.

AGE GROUPS	NUMBER*		RATE PER 1,000 POPULATION	
	Virginia	U. S. Registration Area	Virginia	U. S. Registration Area
All Ages	30,315	1,343,356	12.5	11.3
Under 5	5,641	195,200	21.9	17.7
(Under 1)	(4,226)	(145,374)	(85.5)	(68.1)
5- 9	520	22,956	1.8	1.9
10-14	412	17,652	1.5	1.5
15-19	796	30,990	3.1	2.8
20-24	1,110	41,515	5.1	3.9
25-29	991	42,006	5.6	4.4
30-34	1,024	43,913	6.5	5.0
35-44	2,515	114,590	8.6	6.9
45-54	3,660	155,142	15.6	12.3
55-64	4,215	197,791	28.5	24.5
65-74	4,454	238,213	55.7	52.9
75 and over	4,923	241,521	135.3	127.3
Unknown	54	1,867	.....	.....

*U. S. Census Figures.

TABLE No. 7

Cases and Deaths in the State of Virginia from Certain Important Diseases during the Years 1932-1936, with Annual Average Number of Cases and Average Death Rates for the Five-Year Period

DISEASE	Total Deaths 1932-1936	Average Death Rate 1932-1936	Total Number Cases†	Annual Average Number Cases	1932		1933		1934		1935		1936	
					Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Typhoid fever	512	4.2	4,324	865	1,155	138	1,025	114	777	93	781	84	586	83
Measles	449	3.7	64,451	12,890	4,269	26	9,172	59	29,589	175	18,171	153	3,250	36
Scarlet fever	179	1.5	13,523	2,705	3,032	31	3,449	54	3,034	51	2,095	26	1,913	17
Whooping-cough	1,034	8.5	25,112	5,022	11,777	339	2,607	124	5,449	225	3,355	218	1,924	128
Diphtheria	746	6.1	8,939	1,788	2,057	149	2,139	179	1,989	172	1,502	133	1,252	113
Influenza	4,825	39.4	121,116	24,223	51,318	1,004	25,468	986	4,820	733	18,152	993	21,358	1,109
Epidemic Meningitis	387	3.2	958	192	73	37	88	35	115	48	276	111	406	156
Tuberculosis (all forms)‡	10,013	81.8	14,473	2,895	2,172	2,165	3,862	2,034	3,723	1,948	2,333	1,948	2,383	1,918
Pneumonia (all forms)	11,048	90.3	11,659	3,886	3,767	1,982	3,359	1,792	4,533	2,189	.....	2,260	.....	2,825
Syphilis§	2,223	18.2	22,638	5,660	.....	399	4,703	458	5,725	468	5,546	419	6,664	479
Diarrhea and Dysentery	3,535	28.9	22,354	4,471	5,940	777	4,843	719	4,241	789	3,580	545	3,750	705
Diarrhea and Dysentery (Under 2 yrs.)	2,434	19.9	2,585	646	.....	516	860	498	963	559	373	362	389	499
Maternal deaths	1,636	6.3	.....	.....	.....	396	.....	317	.....	337	.....	290	.....	296
Infants under 1 year	18,303	70.0	.....	.....	.....	3,667	.....	3,499	.....	3,794	.....	3,565	.....	3,778

*Rates for diseases per 100,000 population; for maternal and infant deaths per 1,000 live births.

†Cases for pneumonia not reportable after 1934; annual average is for three-year period. Cases for syphilis not reportable prior to July, 1932; annual average is for four-year period. Cases of diarrhea and dysentery not tabulated according to age until 1933; annual average for under 2 years is for four-year period.

‡Cases are for *pulmonary* tuberculosis only.

§Syphilis includes locomotor ataxia and general paralysis of the insane.

TABLE No. 8

Deaths from Pulmonary Tuberculosis and Other Forms of Tuberculosis in the State of Virginia with Rates per 100,000 Estimated Population, by Color, for the Years 1917-1936, with Average for the Five-Year Period 1932-1936.

YEAR	Tuberculosis of Lungs						Tuberculosis (Other Forms)					
	Number			Rates per 100,000 Population			Number			Rates per 100,000 Population		
	T	W	C	T	W	C	T	W	C	T	W	C
1917.....	3,243	1,437	1,817	144.9	92.2	264.8	539	262	277	24.0	16.8	40.3
1918.....	3,594	1,726	1,868	158.3	109.1	271.4	499	234	265	21.9	14.7	38.5
1919.....	3,012	1,381	1,631	131.2	86.0	236.3	433	186	247	18.8	11.6	35.8
1920.....	2,888	1,333	1,555	124.8	82.0	225.6	431	212	219	18.6	13.1	31.8
1921.....	2,800	1,257	1,543	120.4	76.6	225.1	331	166	165	14.2	10.2	24.1
1922.....	2,745	1,268	1,477	117.5	76.6	216.7	347	189	158	14.8	11.4	23.2
1923.....	2,612	1,221	1,391	111.3	73.1	205.3	289	160	129	12.3	9.6	19.0
1924.....	2,417	1,155	1,262	102.5	68.6	187.3	302	153	149	12.8	9.0	22.1
1925.....	2,407	1,134	1,273	101.6	66.7	190.0	308	165	143	13.0	9.7	21.4
1926.....	2,359	1,150	1,209	99.1	67.1	181.5	294	144	150	12.3	8.4	22.6
1927.....	2,274	1,123	1,151	95.1	64.9	173.8	261	128	133	10.9	7.4	20.1
1928.....	2,223	1,069	1,154	92.5	61.3	175.3	271	134	137	11.3	7.7	20.8
1929.....	2,180	1,065	1,115	90.3	60.5	170.4	238	117	121	9.9	6.7	18.5
1930.....	2,022	953	1,069	83.4	53.7	164.2	219	108	111	9.0	6.1	17.1
1931.....	2,020	927	1,093	83.1	52.0	168.7	236	94	142	9.7	5.3	21.9
1932.....	1,947	932	1,015	80.0	52.1	157.1	218	104	114	8.9	5.8	17.7
1933.....	1,835	836	1,009	75.2	46.0	156.4	199	110	89	8.1	6.1	13.8
1934.....	1,763	817	946	72.1	45.3	147.1	185	91	94	7.5	5.1	14.6
1935.....	1,762	860	902	71.8	47.7	138.5	186	85	101	7.6	4.7	15.5
1936.....	1,715	796	919	69.7	44.1	140.7	203	94	109	8.3	5.2	16.7
Average, 5 years 1932-1936....	1,804	846	958	73.7	47.0	147.9	198	97	101	8.1	5.4	15.7

TABLE No. 9

Deaths from Tuberculosis (all forms) in the State of Virginia, by Color, with Rates per 100,000 Population, by Five-Year Periods from 1917-1936

PERIOD	NUMBER			RATES PER 100,000 POPULATION		
	Total	White	Colored	Total	White	Colored
1917-1921.....	17,781	8,194	9,587	155.2	102.3	278.7
1922-1926.....	14,080	6,739	7,341	119.4	80.0	217.9
1927-1931.....	11,944	5,718	6,226	99.0	65.1	190.2
1932-1936.....	10,013	4,715	5,298	81.8	52.4	163.6

TABLE No. 10

Deaths from Tuberculosis (all forms) in the State of Virginia according to Certain Age Groups, with Rates per 100,000 Estimated Population, for the Five-Year Period 1932-1936

AGE GROUPS	TOTAL		WHITE		COLORED	
	Deaths	Rates	Deaths	Rates	Deaths	Rates
All Ages.....	10,013	81.8	4,715	52.4	5,298	163.6
0–19.....	1,536	28.3	421	10.8	1,115	72.8
20–44.....	4,959	116.0	1,939	60.8	3,020	253.7
45–64.....	2,350	120.8	1,380	94.4	970	200.5
65 and over....	1,162	198.1	972	211.9	190	148.5
Unknown.....	6	.....	3	.....	2	.....

TABLE No. 11

Deaths from Pulmonary Tuberculosis in the State of Virginia, with Percentage Distribution according to Certain Age Groups, by Color, for the Five-Year Period 1932-1936.

AGE GROUPS	TOTAL		WHITE		COLORED	
	Deaths	Per Cent	Deaths	Per Cent	Deaths	Per Cent
All ages.....	9,022	100.0	4,231	100.0	4,791	100.0
0–19 years.....	1,123	12.5	232	5.5	891	18.6
20–44 years....	4,606	51.2	1,801	42.8	2,805	58.6
45–64 years....	2,186	24.3	1,277	30.3	909	19.0
65 and over....	1,101	12.0	918	21.3	183	3.8
Unknown.....	6	.....	3	.....	3	.....

TABLE No. 12

Deaths from Pulmonary Tuberculosis in the State of Virginia, with Rate Distribution per 100,000 according to Certain Age Groups, by Color, for the Five-Year Period 1932-1936.

AGE GROUPS	TOTAL		WHITE		COLORED	
	Deaths	Rates	Deaths	Rates	Deaths	Rates
All ages.....	9,022	73.7	4,231	47.0	4,791	147.9
0–19 years.....	1,123	20.7	232	6.0	891	58.0
20–44 years....	4,606	107.8	1,801	56.6	2,805	257.3
45–64 years....	2,186	112.3	1,277	87.3	909	187.9
65 and over....	1,101	187.7	918	200.1	183	143.1
Unknown.....	6	.....	3	.....	3	.....

TABLE No. 13

Deaths from Cancer in the State of Virginia, by Color, with Rates per 100,000 Population by Five-Year Periods from 1917 to 1936

PERIOD	NUMBER			RATES PER 100,000 POPULATION		
	Total	White	Colored	Total	White	Colored
1917–1921.....	6,232	4,607	1,625	54.4	57.5	47.2
1922–1926.....	7,376	5,565	1,811	62.5	66.1	53.8
1927–1931.....	8,249	6,360	1,889	68.4	72.4	57.7
1932–1936.....	9,887	7,713	2,174	80.8	85.7	67.1

TABLE No. 14

Deaths from Cancer in the State of Virginia by Age, Color, and Sex for the Five-Year Period 1932-1936

AGE GROUPS	Total	WHITE		COLORED	
		Male	Female	Male	Female
All Ages.....	9,887	3,288	4,425	780	1,394
Under 25.....	188	76	59	24	29
25–34.....	321	68	140	26	87
35–44.....	891	169	390	72	260
45–54.....	1,847	440	810	205	392
55–64.....	2,451	778	1,094	225	354
65–74.....	2,419	991	1,078	158	192
75 and over.....	1,765	765	852	70	78
Unknown.....	5	1	2	.....	2

TABLE No. 15

Deaths from Cancer in the State of Virginia according to Certain Age Groups with Rates per 100,000 Population, by Color, for the FiveYear Period 1932-1936.

AGE GROUPS	Total		White		Colored	
	Deaths	Rates	Deaths	Rates	Deaths	Rates
All ages.....	9,887	80.8	7,713	85.7	2,174	67.1
Under 25.....	188	2.9	135	2.9	53	2.9
25–34.....	321	19.0	208	16.3	113	27.5
35–44.....	891	60.0	559	51.4	332	83.7
45–54.....	1,847	154.4	1,250	142.5	597	187.2
55–64.....	2,451	326.8	1,872	320.0	579	350.9
65–74.....	2,419	594.6	2,069	647.8	350	400.4
75 and over....	1,765	981.2	1,617	1,160.0	148	365.5
Unknown.....	5	.....	3	.....	2	.....

TABLE No. 16

Deaths with Death Rates per 100,000 Population for Pneumonia (all forms) in the State of Virginia by Five-Year Periods from 1917 to 1936

PERIOD	Number			Death Rates per 100,000 Population		
	Total	White	Colored	Total	White	Colored
1917–1921.....	13,342	7,138	6,204	116.5	89.1	180.4
1922–1926.....	10,528	5,936	4,592	89.3	70.5	136.3
1927–1931.....	10,434	5,850	4,584	86.5	66.6	140.0
1932–1936.....	11,048	6,417	4,631	90.3	71.3	143.0

TABLE No. 17

Deaths from Pneumonia (all forms) in the State of Virginia by Age, Color, and Sex for the Five-Year Period 1932-1936

AGE	Total	White		Colored	
		Male	Female	Male	Female
All ages	11,048	3,506	2,911	2,556	2,075
Under 5	3,112	872	727	843	670
(Under 1)	(2,199)	(612)	(503)	(613)	(471)
5–19	720	218	178	156	168
20–44	2,048	603	332	652	461
45–64	2,264	644	460	650	510
65 and over	2,900	1,169	1,213	254	264
Unknown	4	.....	1	1	2

TABLE No. 18

Deaths from Pneumonia (all forms) in the State of Virginia according to Certain Age Groups with Rates per 100,000 Population by Color, for the Five-Year Period 1932-1936.

AGE GROUPS	Total		White		Colored	
	Deaths	Rates	Deaths	Rates	Deaths	Rates
All ages	11,048	90.3	6,417	71.3	4,631	143.0
Under 5	3,112	239.8	1,599	169.3	1,513	428.6
(*Under 1)	(2,199)	(882.3)	(1,115)	(604.5)	(1,084)	1,673.6
5–19	720	17.4	396	13.4	324	27.4
20–44	2,048	47.9	935	29.4	1,113	102.1
45–64	2,264	116.3	1,104	75.5	1,160	239.7
65 and over	2,900	494.3	2,382	519.2	518	405.0
Unknown	4	.....	1	.....	3	.....

*Rates computed per 100,000 live births are: Total 841.3; white, 603.2; and colored, 1,415.9.

TABLE No. 19

Deaths from Diarrhea and Dysentery (all ages) in the State of Virginia, by Color, with Rates per 100,000 Population, by Five-Year Periods from 1917-1936, and for Separate Years 1932-1936.

PERIOD	NUMBER			RATES PER 100,000 POPULATION		
	Total	White	Colored	Total	Total	Colored
1917–1921.....	9,546	5,820	3,726	83.3	72.6	108.3
1922–1926.....	6,662	4,005	2,657	56.5	47.5	78.9
1927–1931.....	5,089	3,016	2,073	42.2	34.3	63.3
1932–1936.....	3,535	2,149	1,386	28.9	23.9	42.8
1932.....	777	494	283	31.9	27.6	43.8
1933.....	719	437	282	29.5	24.3	43.8
1934.....	789	474	315	32.3	26.3	49.0
1935.....	545	295	250	22.3	16.4	38.4
1936.....	705	449	256	28.7	24.8	39.2

TABLE No. 20

Deaths from Diarrhea and Dysentery in the State of Virginia, by Month of Occurrence, for the Five-Year Period 1932-1936

TOTAL	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
3,535	90	91	106	108	219	543	664	568	441	411	182	112

TABLE No. 21

Percentage Distribution of Deaths from Diarrhea and Dysentery for Infants Under One Year and Under Two Years, by Color, in the State of Virginia for the Five-Year Period 1932-1936.

COLOR	All Ages	UNDER 1 YEAR		UNDER 2 YEARS (Inc. Under 1 Year)	
		Number	Per Cent of Total	Number	Per Cent of Total
White.....	2,149	1,085	50.5	1,513	70.4
Colored.....	1,386	762	55.0	921	66.5
Total.....	3,535	1,847	52.2	2,434	68.9

TABLE No. 22

Cases and Deaths, with Death Rates per 100,000 Population, for Syphilis, by Color, in the State of Virginia by Five-Year Periods from 1917-1936*

PERIOD	Cases†	Total	White	Colored	Total	White	Colored
1917-1921.....	.....	1,841	792	1,049	16.1	9.9	30.5
1922-1926.....	.....	1,816	727	1,089	15.4	8.6	32.3
1927–1931.....	.....	2,047	699	1,348	17.0	8.0	41.2
1932–1936.....	25,358	2,223	731	1,492	18.2	8.1	46.1

TABLE No. 23

Stillbirths (all causes) with Rates per 1,000 Live Births in the State of Virginia by Five-Year Periods from 1917 to 1936

1917-1921		1922-1926		1927-1931		1932-1936	
Number	Rates Per 1,000 Live Births	Number	Rates Per 1,000 Live Births	Number	Rates Per 1,000 Live Births	Number	Rates Per 1,000 Live Births
14,877	45.2	13,980	43.5	12,221	43.5	11,374	43.5

TABLE No. 24

Deaths from Typhoid Fever in the State of Virginia, by Color, with Rates per 100,000 Estimated Population for the Years 1913-1936, with Average for Five-Year Period 1932-1936.

YEAR	NUMBER			RATES PER 100,000 POPULATION		
	Total	White	Colored	Total	White	Colored
1913	709	421	288	33.1	28.7	42.5
1914	586	337	249	27.0	22.6	36.6
1915	514	291	223	23.4	19.2	32.7
1916	550	316	234	24.8	20.6	34.2
1917	465	236	229	20.7	15.1	33.4
1918	402	246	156	17.7	15.5	22.7
1919	357	210	147	15.5	13.1	21.3
1920	260	157	103	11.2	9.7	14.9
1921	379	229	150	16.3	14.0	21.9
1922	270	140	130	11.6	8.5	19.1
1923	253	125	128	10.8	7.5	18.9
1924	205	123	82	8.7	7.3	12.2
1925	302	174	128	12.7	10.2	19.1
1926	266	162	104	11.2	9.4	15.6
1927	174	115	59	7.3	6.6	8.9
1928	157	102	55	6.5	5.8	8.4
1929	123	76	47	5.1	4.3	7.2
1930	156	93	63	6.4	5.2	9.7
1931	201	119	82	8.3	6.7	12.7
1932	138	88	50	5.7	4.9	7.7
1933	114	78	36	4.7	4.3	5.6
1934	93	52	41	3.8	2.9	6.4
1935	84	43	41	3.4	2.4	6.3
1936	83	51	32	3.4	2.8	4.9
Average for Five-Year Period 1932-1936	102	62	40	4.2	3.5	6.2

TABLE No. 25

Maternal Mortality in the State of Virginia according to Color, by Five-Year Periods from 1917-1936

	Maternal Deaths			Rates per 1,000 Live Births		
	Total	White	Colored	Total	White	Colored
1917–1921.....	2,734	1,581	1,153	8.3	7.0	11.3
1922-1926.....	2,252	1,260	992	7.0	5.6	10.2
1927–1931.....	1,968	1,062	906	7.0	5.3	11.1
1932–1936.....	1,636	916	720	6.3	5.0	9.4

TABLE No. 26

Puerperal Deaths, with Percentage Distribution by Cause, in the State of Virginia for the Five-Year Period 1932-1936

Int. Code No.	CAUSES	Number			Per Cent of Total
		Total	White	Colored	
140–150	All causes.....	1,636	916	720	100.0
146	Puerperal albuminuria and eclampsia..	426	209	217	26.0
145	Puerperal septicemia.....	365	196	169	22.3
140	Abortion with septic condition.....	209	129	80	12.8
149	Other accidents of childbirth.....	187	117	70	11.4
144	Puerperal hemorrhage.....	179	107	72	10.9
141	Abortion without septic condition....	86	47	39	5.3
148	Puerperal phlegmasia, alba dolens (not septic).....	82	56	26	5.0
147	Other toxemias of pregnancy.....	44	28	16	2.7
142	Ectopic gestation.....	41	20	21	2.5
143	Other accidents of pregnancy.....	14	6	8	0.9
150	Other and unspecified conditions of the puerperal state.....	3	1	2	0.2

TABLE No. 27

Deaths of Infants Under One Year in the State of Virginia, by Color, with Rates per 1,000 Live Births by Five-Year Periods from 1917-1936.

PERIOD	NUMBER			RATES PER 1,000 LIVE BIRTHS		
	Total	White	Colored	Total	White	Colored
1917–1921.....	28,988	16,905	12,083	88.0	74.3	118.6
1922–1926.....	25,146	14,770	10,376	78.3	66.1	106.2
1927–1931.....	21,195	12,623	8,572	75.5	63.3	105.1
1932–1936.....	18,303	11,055	7,248	70.0	59.8	94.7

TABLE No. 28

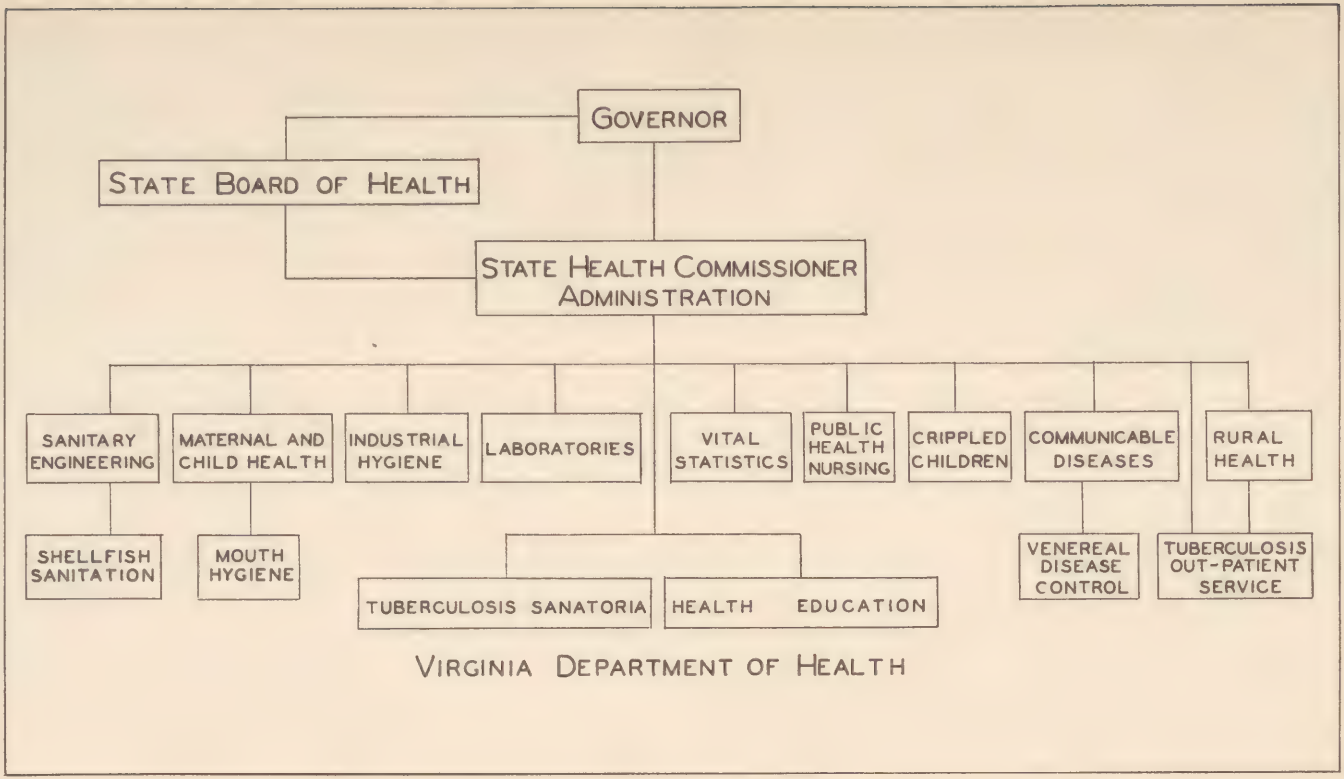
Deaths of Infants Under One Year in the State of Virginia, by Color, with Percentage Distribution of Ages Under One Month, and One Month to One Year, for the Five-Year Period 1932-1936.

COLOR	TOTAL UNDER 1 YEAR	UNDER 1 MONTH		1 MONTH TO 1 YEAR	
	Number	Number	Per Cent of Total	Number	Per Cent of Total
White.....	11,055	6,623	59.9	4,432	40.1
Colored.....	7,248	3,578	49.4	3,670	50.6
Total.....	18,303	10,201	55.7	8,102	44.3

TABLE No. 29

Deaths of Infants Under One Year in the State of Virginia with Percentage Distribution by Cause, for the Five-Year Period 1932-1936

CAUSE OF DEATH	Number	Per Cent of Total
All causes	18,303	100.0
Infectious and parasitic diseases	2,112	11.5
(a) Measles	(114)	
(b) Scarlet fever	(7)	
(c) Whooping-cough	(615)	
(d) Diphtheria	(83)	
(e) Tuberculosis (all forms)	(111)	
(f) Syphilis	(393)	
(g) Other	(789)	
Respiratory diseases (excl. tuberculosis)	2,502	13.7
Diarrhea and dysentery	1,847	10.1
Congenital malformations	1,070	5.8
Early infancy	8,045	44.0
(a) Premature birth	(4,977)	
(b) Injury at birth	(1,168)	
(c) Other	(1,900)	
Violent and accidental	338	1.8
All other causes	2,389	13.1



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